



Rating
Buy

Asia
China

Energy
Chemicals

Company
SPC - H

Reuters
0338.HK

Bloomberg
338 HK

Exchange
HSI

Ticker
0338

ADR Ticker
SHI

ISIN

Date
31 March 2016

Initiation of Coverage

Price at 30 Mar 2016 (HKD)	3.89
Price target - 12mth (HKD)	5.00
52-week range (HKD)	5.33 - 2.45
HANG SENG INDEX	20,366

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Beneficiary of low oil prices; Buy

Distinct breed in Asia oil and gas sector; initiating with Buy

In a sustainable low crude oil price situation, SPC, a pure downstream refining and chemical company in China's oil & gas sector, should benefit the most from robust refining GRM and the chemical up-cycle. More importantly, low oil prices relieve its employed capital, with potential to drive strong FCF ahead. We expect SPC to turn net cash by 2016. Hence, we initiate with a Buy on SPC-H, with a price target of HK\$5.0, offering potential total return of +32%.

Strong FCF & ROIC improvement; higher dividend payout potential

A sustainable low oil price situation should help relieve SPC's employed capital. We believe SPC will earn strong FCF in 2016E-18E (the current share price offers a 10% FCF yield). Moreover, we forecast ROIC to improve strongly by 3.4ppts from 14.1% in 2015 to 17.5% in 2018E. As we expect the company to be in a net cash position by 2016, we see potential for a higher dividend payout if there is no meaningful capex ahead.

Beneficiary of refining sweet spot & chemical up-cycle

We believe SPC's refining and chemical business will continue to generate strong returns in 2016-18E and beyond. In our view, China refining margins will continue to improve with refined products' standard upgrades. We see refining margins remaining in a sweet spot in the next few years, assuming oil prices recover to US\$70/bbl gradually. A global chemical up-cycle until 2017 with tightened supply and balanced demand, alongside potential delay / cancel on China CTO/MTO projects is likely to further widen the chemical spreads.

Valuation: re-rating to continue with ROIC improvement ahead

SPC-H trades at 1.6x/9.7x 2016E P/B / P/E (at +1SD of historical), reflecting the positive outlook. Considering the likely strong FCF ahead, we use DCF to derive our price target of HK\$5.0, implying 2.0x/13x 2016E P/B/P/E. We see 2.0x P/B as justifiable, reflecting its asset value at a time when profitability ahead is clearer, post its listing. The implied PB is in line with the average PB of its peer group although SPC's ROIC is 1.2x higher. Key risks: 1) oil price volatility without concurrent adjustments in refined product prices; and 2) weaker-than-expected demand in refined/chemical products that could lead to lower-than-expected margins.

Forecasts And Ratios

Year End Dec 31	2014A	2015A	2016E	2017E	2018E
EBITDA (CNYm)	1,699.0	5,953.9	6,066.2	6,788.3	6,854.4
Reported NPAT (CNYm)	-692.2	3,274.3	3,623.2	4,432.1	4,548.7
DB EPS FD(CNY)	-0.06	0.30	0.34	0.41	0.42
DB EPS growth (%)	-	-	11.6	22.3	2.6
Price/Book (x)	1.2	1.4	1.6	1.4	1.2
PER (x)	-	8.5	9.7	8.0	7.8
EV/EBITDA (x)	20.1	9.7	9.5	8.0	7.5
DPS (net) (CNY)	0.00	0.10	0.10	0.12	0.13
Yield (net) (%)	0.0	3.9	3.1	3.8	3.9

Source: Deutsche Bank estimates, company data

¹ DB EPS is fully diluted and excludes non-recurring items

Price/price relative



Performance (%)	1m	3m	12m
Absolute	17.9	28.8	31.9
HANG SENG INDEX	6.6	-6.9	-18.1

Source: Deutsche Bank

Deutsche Bank AG/Hong Kong

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Model updated: 30 March 2016

Running the numbers

Asia

China

Chemicals

SPC - H

Reuters: 0338.HK

Bloomberg: 338 HK

Buy

Price (30 Mar 16) HKD 3.89

Target Price HKD 5.00

52 Week range HKD 2.45 - 5.33

Market Cap (m) HKDm 74,257
USDm 9,573

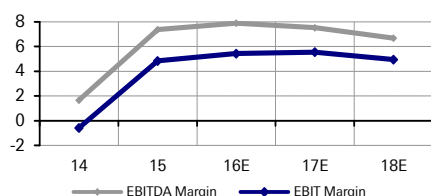
Company Profile

SPC is a subsidiary of China oil major - Sinopec, and it is an integrated refining and chemical company located in Shanghai Jinshan district penetrating Eastern China market. After six phases of construction and expansions, the company has a refining capacity of 16mntpa and ethylene capacity of 850ktpa.

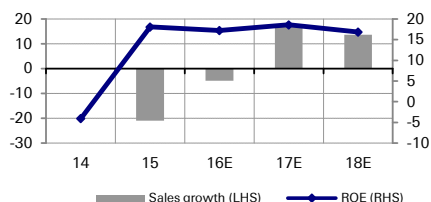
Price Performance



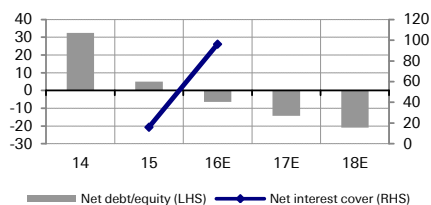
Margin Trends



Growth & Profitability



Solvency



Fiscal year end 31-Dec

Financial Summary

	2014	2015	2016E	2017E	2018E
DB EPS (CNY)	-0.06	0.30	0.34	0.41	0.42
Reported EPS (CNY)	-0.06	0.30	0.34	0.41	0.42
DPS (CNY)	0.00	0.10	0.10	0.12	0.13
BVPS (CNY)	1.5	1.8	2.1	2.4	2.7
Weighted average shares (m)	10,800	10,800	10,800	10,800	10,800
Average market cap (CNYm)	31,414	59,486	62,327	62,327	62,327
Enterprise value (CNYm)	34,181	57,465	57,347	54,472	51,466

Valuation Metrics

P/E (DB) (x)	nm	8.5	9.7	8.0	7.8
P/E (Reported) (x)	nm	8.5	9.7	8.0	7.8
P/BV (x)	1.18	1.37	1.58	1.39	1.23
FCF Yield (%)	13.4	15.3	9.8	9.6	9.6
Dividend Yield (%)	0.0	3.9	3.1	3.8	3.9
EV/Sales (x)	0.3	0.7	0.7	0.6	0.5
EV/EBITDA (x)	20.1	9.7	9.5	8.0	7.5
EV/EBIT (x)	nm	14.7	13.7	10.9	10.1

Income Statement (CNYm)

Sales revenue	102,126	80,748	76,801	90,214	102,505
Gross profit	-185	4,280	6,748	7,163	6,653
EBITDA	1,699	5,954	6,066	6,788	6,854
Depreciation	1,940	1,722	1,594	1,505	1,506
Amortisation	347	323	300	268	276
EBIT	-588	3,909	4,172	5,015	5,072
Net interest income/(expense)	-360	-244	-43	44	176
Associates/affiliates	58	572	566	686	663
Exceptionals/extraordinary	0	0	0	0	0
Other pre-tax income/(expense)	0	0	0	0	0
Profit before tax	-890	4,237	4,695	5,746	5,911
Income tax expense	-214	927	1,032	1,265	1,312
Minorities	16	36	40	49	50
Other post-tax income/(expense)	0	0	0	0	0
Net profit	-692	3,274	3,623	4,432	4,549
DB adjustments (including dilution)	87	-29	0	0	0
DB Net profit	-605	3,246	3,623	4,432	4,549

Cash Flow (CNYm)

Cash flow from operations	3,662	4,933	5,128	5,102	5,076
Net Capex	-1,065	-678	-1,674	-1,724	-1,674
Free cash flow	2,598	4,254	3,455	3,378	3,403
Equity raised/(bought back)	0	0	0	0	0
Dividends paid	-547	-11	-1,087	-1,330	-1,365
Net inc/(dec) in borrowings	-2,059	-3,685	-370	550	450
Other investing/financing cash flows	155	240	65	188	356
Net cash flow	146	798	2,062	2,787	2,844
Change in working capital	2,313	-810	202	-277	-286

Balance Sheet (CNYm)

Cash and other liquid assets	279	1,077	3,140	5,927	8,771
Tangible fixed assets	16,500	15,511	15,291	15,210	15,077
Goodwill/intangible assets	0	0	0	0	0
Associates/investments	2,936	3,311	3,878	4,564	5,227
Other assets	11,190	7,921	8,538	9,727	10,883
Total assets	30,906	27,821	30,846	35,427	39,958
Interest bearing debt	5,711	2,070	1,700	2,250	2,700
Other liabilities	8,423	5,656	6,476	7,356	8,202
Total liabilities	14,134	7,726	8,176	9,606	10,902
Shareholders' equity	16,500	19,797	22,333	25,436	28,620
Minorities	271	297	337	386	436
Total shareholders' equity	16,772	20,094	22,670	25,822	29,056
Net debt	5,432	993	-1,440	-3,677	-6,071

Key Company Metrics

Sales growth (%)	nm	-20.9	-4.9	17.5	13.6
DB EPS growth (%)	na	na	11.6	22.3	2.6
EBITDA Margin (%)	1.7	7.4	7.9	7.5	6.7
EBIT Margin (%)	-0.6	4.8	5.4	5.6	4.9
Payout ratio (%)	nm	33.0	30.0	30.0	30.0
ROE (%)	-4.0	18.0	17.2	18.6	16.8
Capex/sales (%)	1.1	0.9	2.2	1.9	1.7
Capex/depreciation (x)	0.5	0.3	0.9	1.0	1.0
Net debt/equity (%)	32.4	4.9	-6.4	-14.2	-20.9
Net interest cover (x)	nm	16.0	96.2	nm	nm

Source: Company data, Deutsche Bank estimates

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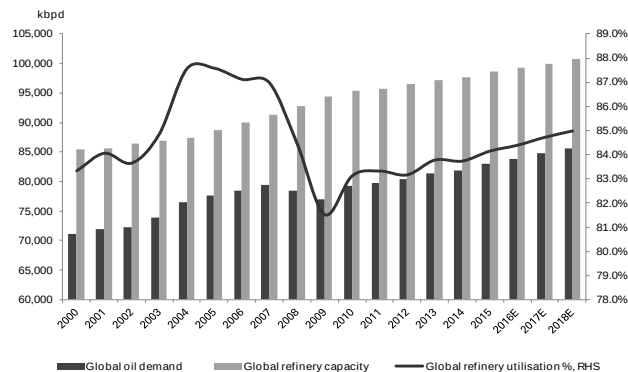
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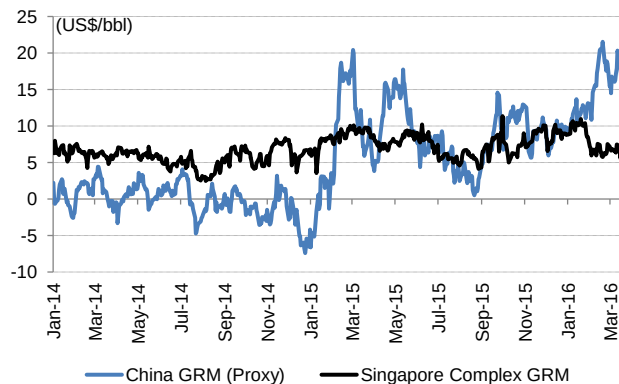
Key charts

Figure 1: Global refining utilization rate



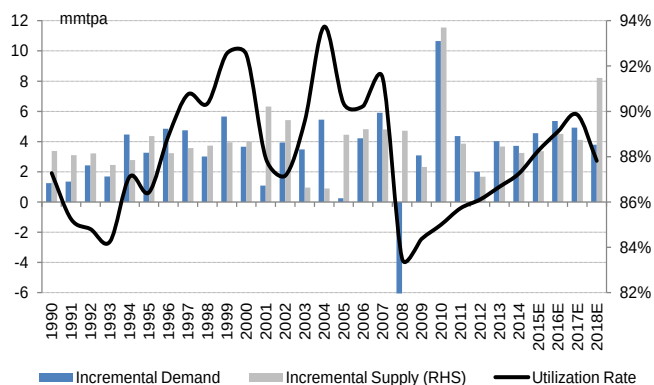
Source: Woodmac, IEA, Deutsche Bank estimates

Figure 2: China GRM / SG Complex GRM



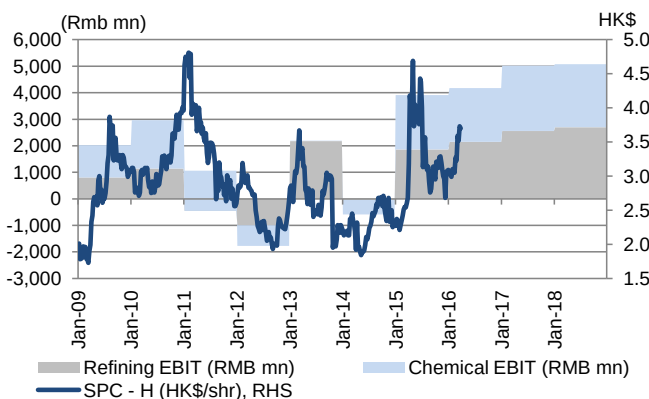
Source: NDRC, Datastream, Deutsche Bank

Figure 3: Global ethylene utilization rate



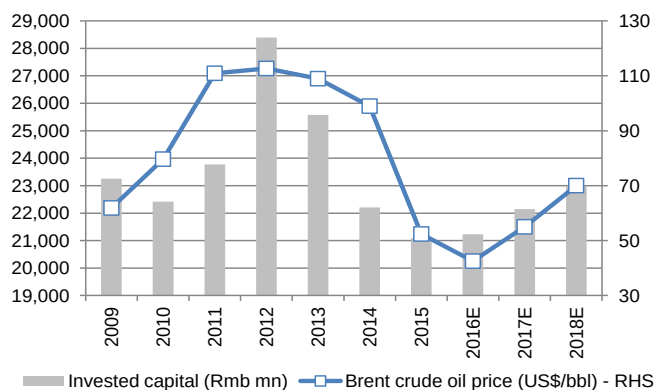
Source: IHS Chemicals, ICIS, Bloomberg Finance LP, Deutsche Bank estimates

Figure 4: Share price vs. Refining/ Chemical EBIT



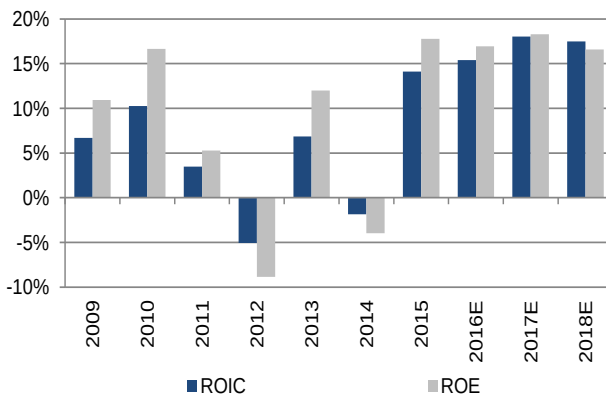
Source: Bloomberg Finance LP, Company data, Deutsche Bank estimate

Figure 5: SPC invested capital and Brent price



Source: Company data, Deutsche Bank estimates

Figure 6: SPC ROIC and ROE (%)



Source: Company data, Deutsche Bank estimates



Investment thesis

Outlook

In a low crude oil price situation, we favor pure downstream companies, such as SPC, amid expectations of strong and predictable margins, thanks to reduced feedstock costs with inelastic end-product pricing. Hence, we expect robust refining and chemical profits ahead. Moreover, as low crude oil prices would release employed capital, we expect SPC's FCF to improve in 2016E-18E and the balance sheet to turn net cash by 2016E. Thus, there is potential that the dividend payout could increase. We also estimate SPC's ROIC will improve strongly by 3.4ppts from 14.1% in 2015 to 17.5% in 2018E.

China refining margins will likely remain in the sweet spot in our forecasting period (we assume oil prices will recover to US\$70/bbl in the long term, within the NDRC's threshold of "appropriate margins" for refiners when oil prices are below US\$80/bbl). Besides, we believe China refined products' standard upgrades will further improve refining margins. In January 2016, the NDRC set a price floor for refined product oil at <US\$40/bbl. This could boost refining margins in 1H16E if it is allowed to keep the extra profits. On the chemical side, a likely tightening global ethylene supply-demand balance in the next two years should improve olefin chain spreads, while the aromatics chain should remain resilient. Nonetheless, new China CTO/MTO capacity is likely to face a further delay due to diminishing competitiveness against naphtha crackers.

SPC is the first China oil & gas SOE to reform its shareholding structure, granting employees share options linked to the company's performance and returns. This aims to improve its efficiency and potentially offer a higher dividend payout for shareholders.

Valuation

With the likely strong FCF ahead, we adopt a DCF methodology to derive our price target of HK\$5.0, implying 2.0x 2016E P/B. We believe our 2.0x P/B valuation is justifiable, considering the likely stronger ROIC ahead and the improving refining and chemical margins outlook. Our implied P/B is in line with the weighted average of Asia and Global peers of 1.6x/2.3x, although SPC's 2016E ROIC of 15.4% is 1.2x higher than the Asia/Global peer average of 6.8%/7.2%.

Risks

Downside risks: volatility in crude oil prices without a concurrent change in refined product prices, leading to a drop in GRM. Our sensitivity analysis shows that assuming no concurrent change in product prices, every +1% change in crude oil prices would lead to a -6% change in net earnings and a -7% change in the target price. Sooner-than-expected capacity additions and further deterioration in the global economy may lead to a worse-than-expected supply-demand balance.

Valuation Comps

Figure 7: Global refining and chemicals comps

Name	Reuters Ticker	DB Rating	Trading Curr	30-Mar-16 Share price	YTD Perf	Market Cap (USD mn)	P/E (x) FY16E	P/E (x) FY17E	EPS FY15-17E	P/B (x) FY16E	P/B (x) FY17E	ROE (%) FY16E	ROE (%) FY17E	Dvd yield (%) FY16E	Dvd yield (%) FY17E	EV/EBITDA (x) FY16E	EV/EBITDA (x) FY17E	ROIC (%) FY16E	ROIC (%) FY17E	FCF Yield (%) FY16E	FCF Yield (%) FY17E
China Chemical																					
SPC - H	0338.HK	Buy	HKD	3.89	26%	9,603	9.7	7.8	11%	1.6	1.4	16.9	18.3	3.1	3.8	9.9	8.6	15.4	18.0	10.1	10.0
SPC - A	600688.SS	Sell	CNY	6.96	7%	9,603	20.8	17.0	11%	3.4	3.0	16.9	18.3	1.4	1.8	9.9	8.6	15.4	18.0	4.7	4.7
Rongsheng Petrochemical	002493.SZ	NR	CNY	13.55	-13%	5,321	25.4	20.8	67%	NA	NA	17.1	17.3	1.5	1.5	NA	NA	NA	NA	NA	NA
Zhejiang Longsheng	600352.SS	NR	CNY	10.22	-12%	5,133	9.4	7.4	15%	2.0	2.1	14.8	11.2	2.1	2.1	10.8	9.4	NA	NA	NA	NA
Wanhua Chemical	600309.SS	NR	CNY	14.74	-17%	4,920	12.8	10.4	18%	2.2	1.9	18.2	19.0	2.4	2.4	8.2	7.2	11.9	14.9	NA	NA
Hainan Rubber	601118.SS	NR	CNY	5.98	-21%	3,629	221.5	139.1	29%	2.5	2.5	1.5	2.3	0.2	0.2	50.6	38.5	NA	NA	NA	NA
China Sanjiang	2198.HK	NR	HKD	1.33	-2%	170	5.8	2.3	NM	0.4	0.4	7.6	18.1	5.4	5.4	8.0	5.0	5.3	13.3	NA	NA
Weighted average					1%		35.0	24.6	22%	2.4	2.2	15.3	15.8	2.0	2.2	14.3	11.8	14.6	17.4	7.4	7.3
China Oil Majors																					
PetroChina	0857.HK	NR	HKD	5.14	1%	205,716	78.1	14.7	15%	0.7	0.6	1.3	3.9	1.3	1.3	8.2	NA	2.0	4.2	1.8	5.5
Sinopec	0386.HK	NR	HKD	4.99	7%	86,197	15.5	10.2	17%	0.7	0.7	5.1	7.5	3.2	3.2	5.4	4.6	4.5	6.9	5.6	6.4
CNOOC Ltd	0883.HK	NR	HKD	9.07	12%	52,228	210.5	13.2	13%	0.9	0.9	0.7	6.6	2.3	2.3	6.4	4.4	0.7	5.4	1.9	1.8
Weighted average					4%		82.5	13.3	15%	0.7	0.7	2.2	5.2	1.9	1.9	7.3	4.5	2.5	5.1	2.8	5.2
Asia Chemical																					
SABIC (SAR)	2010.SE	Hold	SAR	73.75	-4%	71,890	20.1	14.5	-7%	1.4	1.4	6.9	9.8	4.7	4.7	8.0	6.9	3.6	5.1	5.8	7.1
Reliance Industries	RELI.BO	Buy	INR	1,035.90	3%	50,143	11.8	10.9	9%	1.4	1.2	12.4	12.0	1.0	1.1	11.7	10.1	6.2	6.4	NM	1.2
Formosa Petrochemical	6505.TW	Hold	TWD	93.00	18%	27,164	31.4	31.0	-11%	3.3	3.2	10.4	10.5	2.5	2.6	18.4	18.0	6.0	6.2	6.1	5.1
Shin-Etsu Chemical	4063.JT	NR	JPY	5,836	-12%	22,484	17.2	16.5	9%	1.2	1.2	7.2	7.2	1.9	1.9	5.9	5.6	11.4	13.5	NA	NA
Industries Qatar (QAR)	IQCD.QA	Buy	QAR	107.90	-3%	22,214	19.1	15.2	-3%	1.9	1.9	10.2	12.5	4.6	4.6	56.2	54.2	2.9	2.9	4.3	5.6
LG Chem	051910.KS	Buy	KRW	331,000	1%	16,855	16.6	13.1	17%	1.7	1.5	10.7	12.4	1.5	1.8	7.3	6.2	11.0	13.1	3.4	2.7
Nan Ya Plastics	1303.TW	Buy	TWD	67.60	11%	16,438	16.8	15.2	0%	1.5	1.5	9.4	9.9	3.6	3.9	6.7	5.7	4.7	5.2	8.5	6.0
Formosa Plastics	1301.TW	Hold	TWD	80.80	5%	15,771	19.5	17.6	2%	1.6	1.6	8.6	9.1	3.1	3.4	22.4	21.1	2.3	2.3	1.2	4.6
Formosa C&F	1326.TW	Hold	TWD	80.10	8%	14,350	24.7	24.9	-9%	1.6	1.5	6.4	6.2	2.4	2.4	11.7	11.7	2.6	2.3	2.5	4.2
IOC	IOCB.BO	Buy	INR	392.20	-9%	13,371	7.9	7.3	39%	1.2	1.1	16.5	16.0	3.3	3.8	7.1	5.8	8.6	9.7	7.3	NM
Petronas Chemicals	PCGB.KL	NR	MYR	6.73	-6%	13,649	18.7	17.1	4%	2.1	1.9	11.7	11.6	2.7	2.7	9.2	8.5	19.1	20.7	6.4	9.1
SK Innovation	096770.KS	Buy	KRW	170,000	31%	8,818	15.6	12.1	15%	0.9	0.8	5.8	7.2	1.9	1.9	6.5	5.6	5.8	6.8	11.8	5.1
Mitsubishi Chem	4188.JT	NR	JPY	599.40	-23%	8,050	22.6	9.6	27%	0.9	0.9	4.3	9.5	2.3	2.3	5.8	5.8	5.9	5.8	NA	NA
PTTGC	PTTGC.BK	Hold	THB	59.50	19%	7,704	8.5	7.6	20%	1.1	1.0	13.1	13.5	4.7	5.3	5.2	4.4	12.6	14.8	22.8	14.8
Sumitomo Chemical	4005.JT	NR	JPY	512.00	-27%	7,557	10.0	9.1	27%	1.0	0.9	10.4	10.1	2.8	2.8	6.7	6.8	5.6	5.7	NA	NA
BPCL	BPCL.BO	Buy	INR	875.00	-2%	7,509	9.4	8.6	15%	2.3	2.0	27.0	24.8	3.2	3.4	7.3	6.2	13.4	14.2	4.5	5.4
Lotte Chemical	011170.KS	Hold	KRW	349,500	44%	7,102	11.0	9.5	8%	1.3	1.1	12.9	12.7	0.7	0.9	4.2	3.3	11.1	10.0	9.5	8.4
S-Oil Corp	010950.KS	Buy	KRW	96,400	21%	6,758	11.5	10.5	18%	1.8	1.6	16.5	15.9	2.3	2.4	8.0	7.5	13.5	12.4	NM	NM
G S Holdings	078930.KS	Hold	KRW	58,400	15%	3,904	15.6	15.0	-6%	0.7	0.6	4.4	4.4	2.2	2.3	3.3	3.0	3.3	3.4	0.2	NM
Mitsui Chemicals	4183.JT	NR	JPY	374.00	-31%	3,408	10.8	10.2	33%	0.9	0.8	8.4	8.6	2.1	2.1	7.2	6.9	5.7	5.9	NA	NA
Indorama	IVL.BK	Buy	THB	22.60	6%	3,080	15.7	12.9	6%	1.4	1.3	8.9	10.1	1.9	2.3	7.8	6.8	10.9	12.2	0.4	10.7
Thai Oil	TOP.BK	Buy	THB	68.50	4%	3,187	9.7	9.7	6%	1.4	1.3	15.0	13.9	4.7	4.7	6.0	5.6	15.9	16.8	13.4	11.0
HPCL	HPCL.BO	Buy	INR	766.90	-8%	2,715	8.9	7.3	33%	1.6	1.5	19.7	21.2	3.7	4.7	6.0	5.2	6.7	8.4	9.5	NM
Hanwha Chemical	009830.KS	Hold	KRW	24,650	-9%	2,697	14.8	14.7	7%	0.8	0.8	5.4	5.2	0.8	0.8	7.2	7.0	4.1	3.9	NM	1.1
Kumho Petrochemical	011780.KS	Buy	KRW	58,400	12%	1,748	8.6	6.3	26%	0.9	0.8	10.9	13.3	1.7	2.1	7.7	6.2	5.3	7.1	9.9	10.9
TSRC	2103.TW	NR	TWD	27.20	35%	696	20.8	13.0	37%	1.4	1.3	6.0	11.8	3.8	3.8	10.1	8.3	8.1	13.4	NA	NA
OUCG	1710.TW	NR	TWD	20.60	-2%	565	27.0	17.2	62%	1.1	NA	3.8	3.1	3.6	3.6	29.7	24.2	NA	NA	NA	NA
Weighted average					2%		17.4	14.9	5%	1.6	1.5	10.0	10.9	2.9	3.0	12.5	11.5	6.8	7.5	6.1	5.4
Global Chemical																					
ExxonMobil	XOM.N	Hold	USD	84.53	8%	354,668	37.1	22.9	0%	2.1	2.1	5.6	9.2	3.5	3.7	12.9	10.8	2.9	4.6	2.5	4.5
Chevron	CVX.N	Buy	USD	95.32	6%	178,723	NM	42.9	8%	1.2	1.2	0.1	2.8	4.5	4.6	10.6	9.6	0.1	0.7	NM	3.8
BASF	BASF.DE	Buy	EUR	65.93	-7%	80,687	16.6	15.1	0%	1.9	1.8	11.6	12.4	4.6	4.8	7.7	7.2	10.0	10.9	6.1	7.3
DuPont	DD.N	Buy	USD	63.64	-4%	58,642	17.3	15.9	7%	5.7	5.7	32.9	35.8	2.3	2.5	10.3	10.0	23.7	24.9	6.1	5.7
Dow Chemical	DOW.N	Buy	USD	51.12	-1%	54,955	15.5	12.8	4%	2.1	2.1	14.0	17.4	3.6	3.8	6.6	5.7	13.0	14.3	9.0	6.4
Phillips 66	PSX.N	Hold	USD	87.43	7%	46,008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LyondellBasell	LYB.N	Hold	USD	85.19	-2%	42,578	8.5	9.0	-1%	6.1	4.7	67.5	58.8	3.8	3.6	6.0	6.2	31.6	27.1	8.3	6.9
Valero	VLO.N	Buy	USD	65.28	-8%	30,707	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Marathon Petroleum	MPC.N	Buy	USD	36.66	-29%	17,230	7.7	NA	NA	1.5	NA	20.0	NA	3.9	NA	3.4	NA	16.0	NA	10.9	NA
Hess	HES.N	Hold	USD	50.40	4%	17,969	NM	NA	NM	0.9	NA	-7.0	NA	2.0	NA	15.1	NA	-5.0	NA	NM	NA
Tesoro	TSO.N	Hold	USD	89.72	-15%	10,757	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Neste	NESLV.HE	NR	EUR	23.54	-15%	8,777	11.4	12.5	0%	2.2	2.0	20.4	16.4	3.2	3.2	7.2	7.7	19.5	19.5	NA	NA
PKN Orlen	PKN.WA	Buy	PLN	71.14	5%	7,467	7.1	7.6	-13%	1.2	1.1	18.0	14.6	2.7	2.8	4.7	4.7	14.5	12.8	10.2	9.3
HollyFrontier	HFC.N	Buy	USD	35.52	-11%	7,017	9.0	NA	NA	1.2	NA	12.9	NA	3.8	NA	5.9	NA	11.4	NA	9.1	NA
Tupras	TUPRS.IS	Buy	TRY	79.30	14%	6,088	8.2	7.9	0%	2.2	2.0	28.0	26.9	9.8	10.2	7.2	6.9	19.3	19.4	12.9	12.7
MOL HB	MOLB.BU	Hold	HUF	15,960	12%	4,946	11.2	12.4	-7%	1.1	1.0	9.2	7.9	3.4	3.4	3.8	3.8	7.4	6.9	8.9	6.6
Calumet	CLMT.N	NR	USD	11.42	-43%	867	10.6	10.3	-19%	0.7	NA	14.0	30.2	23.6	23.6	7.6	7.2	NA	NA	NA	NA
Weighted average					3%		26.7	24.2	2%	2.3	2.3	11.2	13.5	3.8	4.0	10.5	9.3	7.2	8.1	4.8	5.1

Source: Bloomberg Finance LP, Company data, Deutsche Bank estimates





Relative safe haven in China oil & gas market

We initiate with a Buy on Sinopec Shanghai Petrochemical Company H-Share (SPC, 338 HK), and a target price of HK\$5.0/share. SPC is a subsidiary of China oil major, Sinopec (386 HK), and it is an integrated refining and chemical company located in the Shanghai Jinshan district penetrating the Eastern China market. After six phases of construction and expansion, the company had a refining capacity of 16mntpa and ethylene capacity of 850ktpa in 2015.

In a sustainable low oil price environment, we believe SPC, a pure refining and chemical marker, will outperform its overall China oil & gas peers on the back of:

- **Likely strong cash flow yield with growing ROIC:** Low oil prices relieve SPC's employed capital, resulting in better free cash flow. We estimate SPC will turn into net cash by 2016. At current share prices, SPC-H yields an FCF of 10%. Also, we estimate SPC's ROIC will grow from 14.1% in 2015 to 15.4% in 2016E, higher than the Asia/Global peer average of 6.8%/7.2% in 2016E.
- **Bullish Chinese GRM ahead:** We expect SPC's refining margin to benefit from refined product upgrades; 11 coastal provinces started selling GBV diesel fuel in January 2016 and sales of industrial GB IV diesel fuel should start in July 2017. Refiners are allowed by the NDRC to price GBV diesel at a RMB160/ton premium to GBIV diesel. We expect oil prices to gradually recover to US\$70/bbl in the long term, below the US\$80/bbl oil price stipulated under the NDRC's oil price mechanism that enables refiners to earn "appropriate" margins.
- **Sustainable chemical earnings:** We estimate the global ethylene balance will tighten until 2017. We estimate the global utilization rate will rise to 90% in 2017 (the highest since 2007) from 87% in 2014. Also, we see upside risk to new Chinese CTO/MTO capacity as naphtha cracker is more competitive when oil prices are below US\$60/bbl. Hence, there could be further upside to our projected utilization of 90% in 2017E.

We estimate SPC's net profit will record an 11% CAGR over 2015-18E with strong support from the refining and chemical segments. Our DCF-based price target of HK\$5.0 implies 13x / 11x 2016E/17E P/E and 2.0x/1.8x 2016E/17E P/B. This is in line with the Gordon Growth Model-derived target multiples.

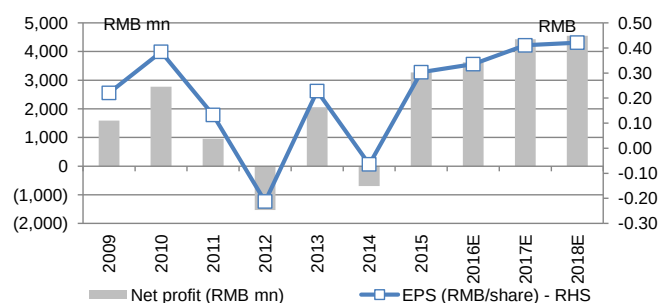
We initiate coverage of SPC-H (338 HK) with a Buy rating and TP of HK\$5.0

Likely further re-rating ahead on:

- 1) **Potential strong cash flow yield with ROIC improvement**
- 2) **Bullish Chinese GRM**
- 3) **Chemical up-cycle**

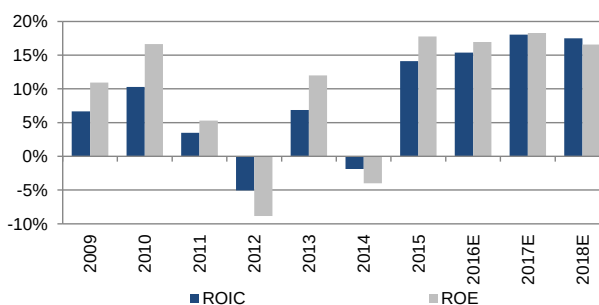
We expect 11% CAGR in net profit over 2015-18, with strong support from both the refining and chemical segments

Figure 8: Net income vs. EPS movement



Source: Company data, Deutsche Bank estimates

Figure 9: ROIC & ROE 2009-2018E



Source: Company data, Deutsche Bank estimates



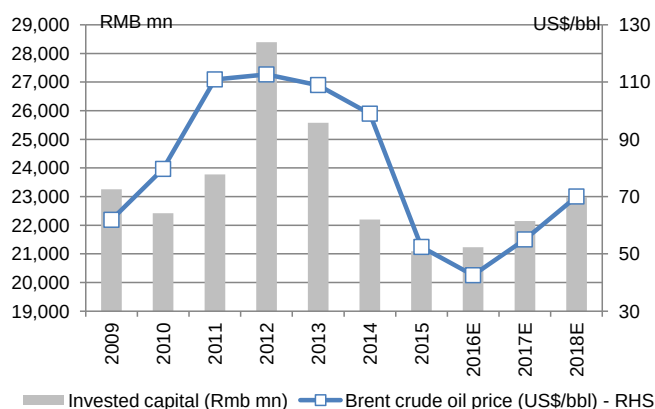
A cash machine in low oil price environment

We expect ROIC to rise from 14.1% in 2015 to 17.5% in 2018E

Low oil price release capital burden; rising ROIC

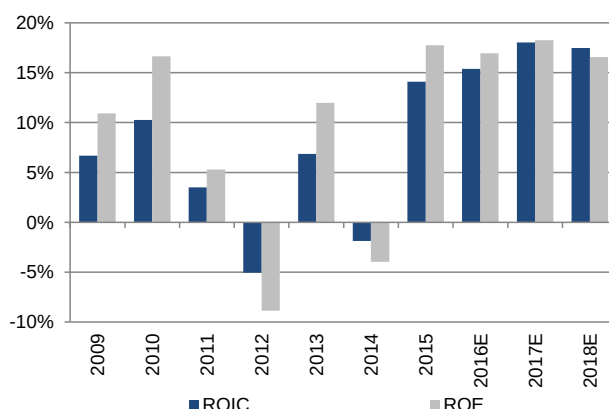
With a much lower feedstock price and inventory cost, we believe a sustainable low oil price situation would not only help the company to achieve better margins in operations but also help to ease its financial burden. SPC should be able to reduce its invested capital from the peak of RMB28bn (Brent price was US\$112/bbl) in 2012 to RMB21bn (Brent price was US\$52/bbl) in 2015. We expect ROIC to rise from 14.1% in 2015 to 17.5% in 2018E.

Figure 10: Invested capital vs. Brent crude oil price



Source: Company data, Deutsche Bank estimates

Figure 11: ROIC & ROE 2009-2018E



Source: Company data, Deutsche Bank estimates

Strong FCF yield; cheapest among Asia refining and chemical peers

We believe SPC will continue to generate strong free cash flow of RMB3.5bn-RMB3.6bn in 2016E-18E with capex of RMB1.7-1.75bn in each year. Moreover, we believe SPC will turn into a net cash company by 2016. At the current level, the SPC-H share price yields an FCF of 10% compared with Asia chemical peers' 6.2% on average in 2016E. SPC has one of the best balance sheets among refining and chemical peers in Asia.

Figure 13: SPC ROIC & FCF yield best among Asia refining and chemical peers

Name	Reuters Ticker	DB Rating	P/E (x) FY16E	P/E (x) FY17E	EPS FY15-17E	P/B (x) FY16E	P/B (x) FY17E	Dvd yield (%) FY16E	Dvd yield (%) FY17E	ROIC (%) FY16E	ROIC (%) FY17E	FCF Yield (%) FY16E	FCF Yield (%) FY17E
SPC - H	0338.HK	Buy	9.7	7.8	11%	1.6	1.4	3.1	3.8	15.4	18.0	10.1	10.0
SPC - A	600688.SS	Sell	20.8	17.0	11%	3.4	3.0	1.4	1.8	15.4	18.0	4.7	4.7
SABIC (SAR)	2010.SE	Hold	20.1	14.5	-7%	1.4	1.4	4.7	4.7	3.6	5.1	5.8	7.1
Reliance Industries	RELI.BO	Buy	11.8	10.9	9%	1.4	1.2	1.0	1.1	6.2	6.4	NM	1.2
Formosa Petrochemical	6505.TW	Hold	31.4	31.0	-11%	3.3	3.2	2.5	2.6	6.0	6.2	6.1	5.1
Industries Qatar (QAR)	IQCD.QA	Buy	19.1	15.2	-3%	1.9	1.9	4.6	4.6	2.9	2.9	4.3	5.6
LG Chem	051910.KS	Buy	16.6	13.1	17%	1.7	1.5	1.5	1.8	11.0	13.1	3.4	2.7
Nan Ya Plastics	1303.TW	Buy	16.8	15.2	0%	1.5	1.5	3.6	3.9	4.7	5.2	8.5	6.0
Formosa Plastics	1301.TW	Hold	19.5	17.6	2%	1.6	1.6	3.1	3.4	2.3	2.3	1.2	4.6
Formosa C&F	1326.TW	Hold	24.7	24.9	-9%	1.6	1.5	2.4	2.4	2.6	2.3	2.5	4.2
IOC	IOC.BO	Buy	7.9	7.3	39%	1.2	1.1	3.3	3.8	8.6	9.7	7.3	NM
SK Innovation	096770.KS	Buy	15.6	12.1	15%	0.9	0.8	1.9	1.9	5.8	6.8	11.8	5.1
PTTGC	PTTGC.BK	Hold	8.5	7.6	20%	1.1	1.0	4.7	5.3	12.6	14.8	22.8	14.8
BPCL	BPCL.BO	Buy	9.4	8.6	15%	2.3	2.0	3.2	3.4	13.4	14.2	4.5	5.4
Lotte Chemical	011170.KS	Hold	11.0	9.5	8%	1.3	1.1	0.7	0.9	11.1	10.0	9.5	8.4
S-Oil Corp	010950.KS	Buy	11.5	10.5	18%	1.8	1.6	2.3	2.4	13.5	12.4	NM	NM
G S Holdings	078930.KS	Hold	15.6	15.0	-6%	0.7	0.6	2.2	2.3	3.3	3.4	0.2	NM
Indorama	IVL.BK	Buy	15.7	12.9	6%	1.4	1.3	1.9	2.3	10.9	12.2	0.4	10.7
Thai Oil	TOP.BK	Buy	9.7	9.7	6%	1.4	1.3	4.7	4.7	15.9	16.8	13.4	11.0
HPCL	HPCL.BO	Buy	8.9	7.3	33%	1.6	1.5	3.7	4.7	6.7	8.4	9.5	NM
Hanwha Chemical	009830.KS	Hold	14.8	14.7	7%	0.8	0.8	0.8	0.8	4.1	3.9	NM	1.1
Kumho Petrochemical	011780.KS	Buy	8.6	6.3	26%	0.9	0.8	1.7	2.1	5.3	7.1	9.9	10.9
Weighted average			17.3	14.8	4%	1.7	1.6	3.0	3.1	6.5	7.3	6.2	5.4

Source: Bloomberg Finance LP, Deutsche Bank estimates

Figure 12: 2016E capex breakdown

Major Projects	RMB mn
100ktpa EVA plant	250
Third 220KV Power Supply Project	150
Catalytic Diesel Processing Revamp in 2# Diesel Hydrogenation Plant	80
1#-5# & 7# Boilers Desulphurization Revamp in Thermal Power Division	50
Cogeneration Unit "Ultra Low Discharge & Energy Conservation" Project in Thermal Power Division	400
300ktpa Alkylation Plant	200

Source: Company, Deutsche Bank

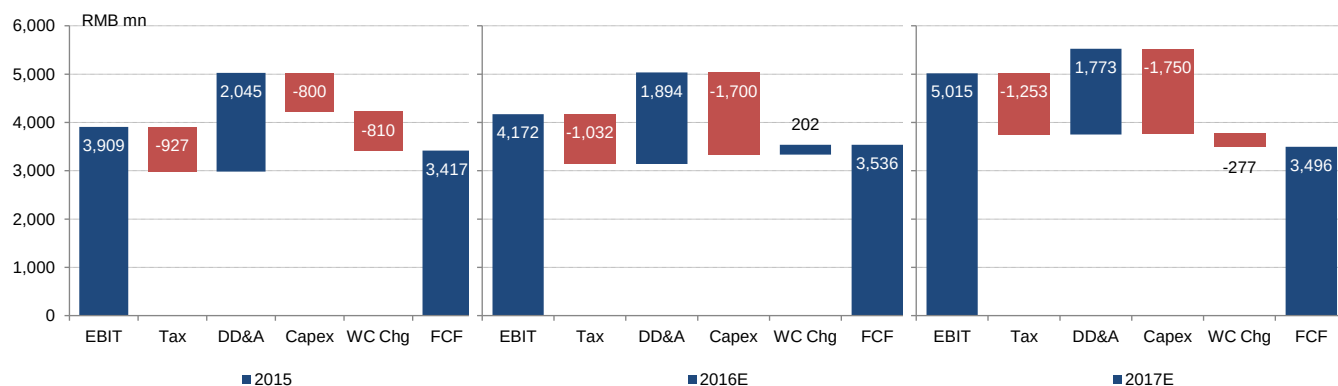
SPC has one of the best balance sheets among refining and chemical peers in Asia.



Catalysts: dividend lift / new investments

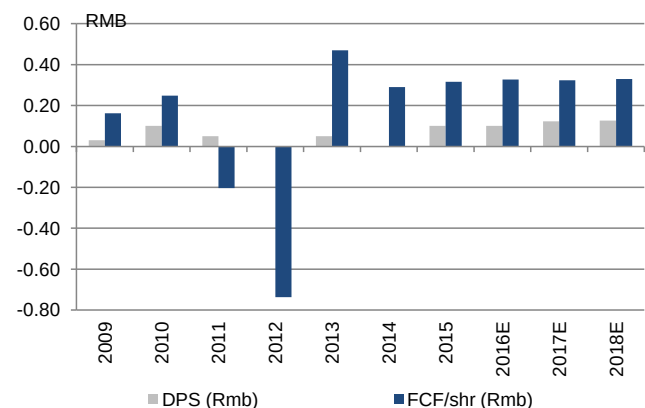
In our view, assuming no further big investment, SPC could lift its dividend payout from the current 30%. Conversely, SPC could invest in large CDU/ethylene projects such as filling in the Eastern China capacity where Sinopec Gaoqiao Petrochem (located in Shanghai Pudong District) has planned to shut down. Sinopec Gaoqiao Petrochem has a 12mntpa of refining throughput capacity, which is equivalent to 78% of SPC's capacity. Per our analysis, 12mnton of refining capacity would require capex of >RMB100bn.

Figure 14: 2015-17E free cash flow breakdown



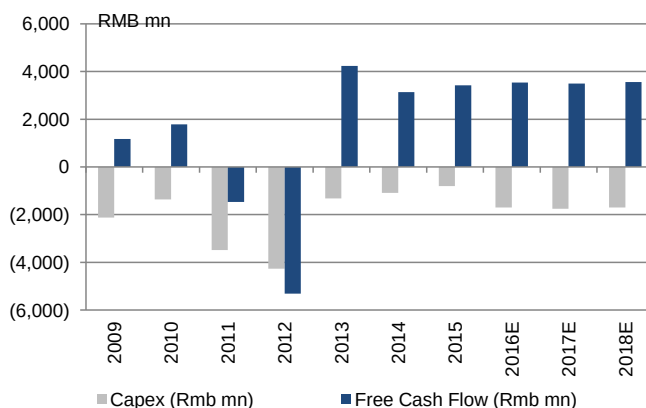
Source: Company data, Deutsche Bank estimates

Figure 15: DPS vs. free cash flow/share



Source: Company data, Deutsche Bank estimates

Figure 16: Capex vs. free cash flow movement



Source: Company data, Deutsche Bank estimates

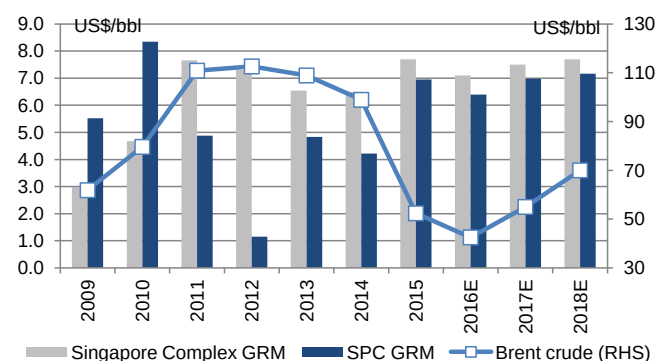


Bullish Chinese GRM ahead to trigger re-rating

After years of earnings volatility in the refining market, China's refining market is now finally witnessing stable margins amid a sluggish oil price outlook. Among companies in the oil & gas sector in China, downstream companies stand out in terms of benefits. We expect SPC's refining margin at the EBIT level to improve from a loss of US\$0.05/bbl in 2014 to US\$3.6/bbl in 2018E on the back of slow but steady oil price recovery and rising fuel standards.

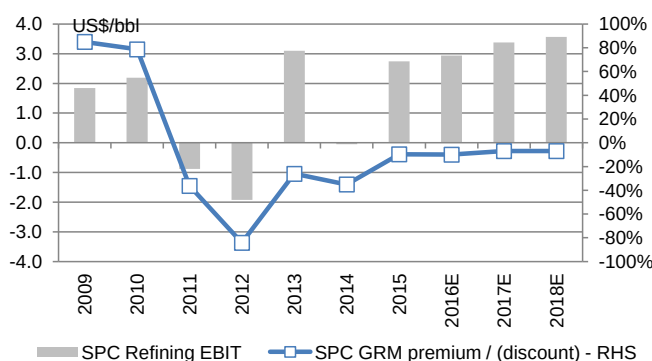
We expect SPC refining EBIT to improve from a loss of US\$0.05/bbl in 2014 to US\$3.6/bbl in 2018E

Figure 17: SPC GRM vs. SG Complex GRM/ Brent Price



Source: Bloomberg Finance LP, Reuters, Company data, Deutsche Bank estimates

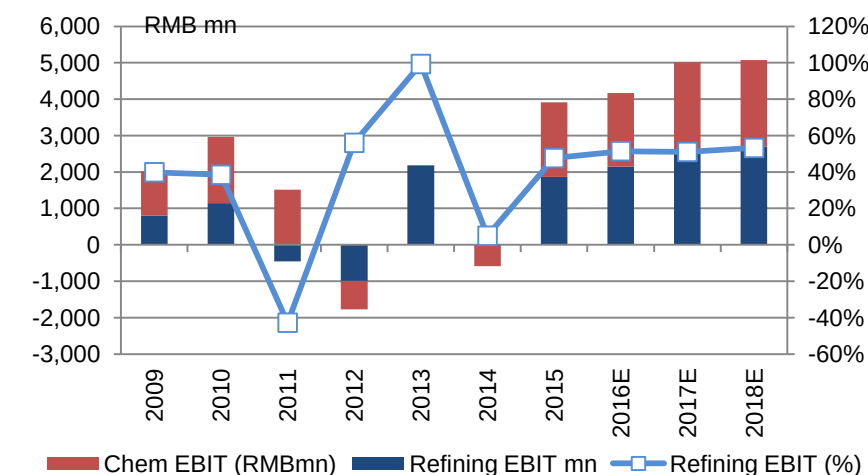
Figure 18: SPC GRM Premium/(Discount) vs. EBIT



Source: Bloomberg Finance LP, Reuters, Company data, Deutsche Bank estimates

We expect SPC's refining segment to achieve a utilization rate of 91%-93% without major overhauls ahead, making EBIT of RMB2.1bn-2.7bn during 2016-2018E, an improvement from the RMB1.9bn in 2015. SPC's refining should account for c.51%-53% of EBIT in 2016-2018E.

Figure 20: Historical breakdown of SPC EBIT (RMBmn)



Source: Company data, Deutsche Bank estimates

Figure 19: SPC facility profile

Capacity	Mntpa.
CDU	16.00
Vacuum Distillation Unit	7.14
Residue Catalytic Cracking	4.62
Distillate Hydrocracking	3.17
Mild Hydrocracking	1.50
Delayed/Fluid Coking	2.20
Continuous/Cyclic Catalytic Reforming	1.49
MTBE/ETBE/TAME production	0.07
BTX production	0.40
Bitumen	0.89
Residue Desulphurization	3.86
Distillate Hydrotreater	7.40
Naphtha Hydrotreater	2.26

Source: Woodmac Deutsche Bank



Bullish Asia refining margin setting tone until 2018E

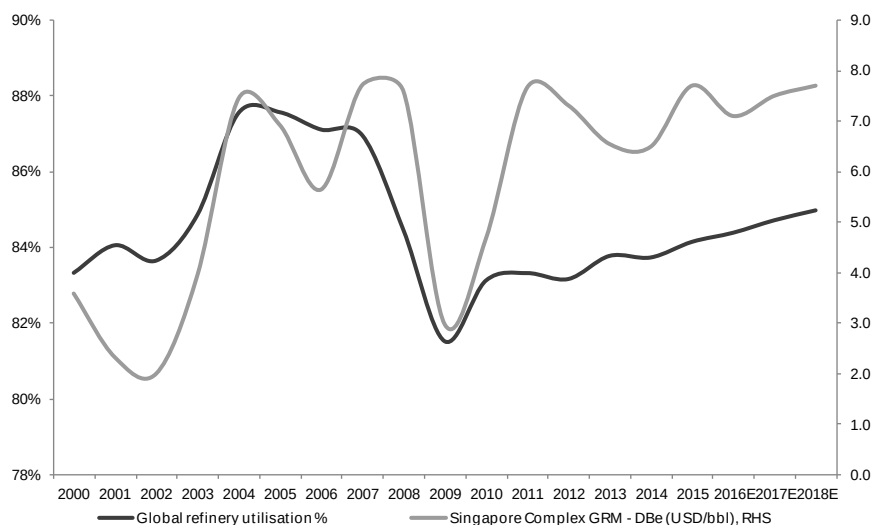
With an improving demand-supply environment, we forecast refining margins (GRMs) at US\$7.1/7.5/7.7/ bbl for 2016/17/18E on slow capacity additions (we estimate incremental refining capacity addition of only 2.2mmbpd over 2016-18E; please see [Asia Oil & Gas – Slowing capacity additions report dated 29 February, 2016 by Harshad Katkar](#) for details). The global refining utilization rate bottomed at 81.5% in 2009 (which also saw Singapore GRMs bottoming, at c.US\$3.0/bbl) before reaching 84.2% in 2015 with Singapore complex GRMs averaging at US\$7.7/bbl. We expect that the utilization rate will continue to rise to 84.7%/85.0% in 2017E and 2018E.

Figure 21: DB Asia refining margin estimates

US\$/bbl	Asia refining margin
2016E	7.1
2017E	7.5
2018E	7.7

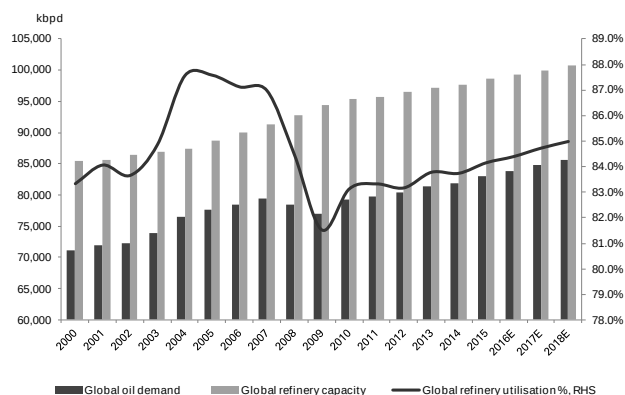
Source: Deutsche Bank estimates

Figure 22: Global refining supply/demand and SG oil refining margin trend



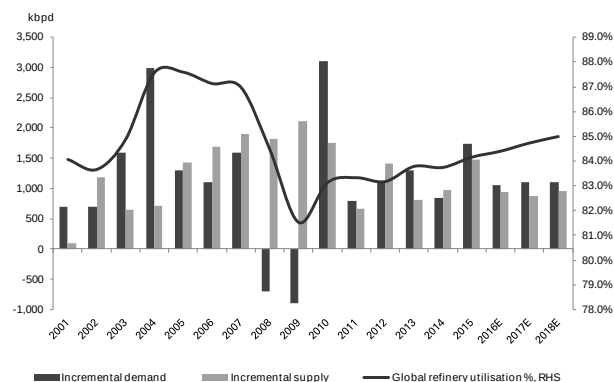
Source: Wood Mackenzie, IEA, Bloomberg Finance LP, Deutsche Bank estimates

Figure 23: Global oil refining supply/demand and utilisation rate outlook



Source: Wood Mackenzie, IEA, Deutsche Bank estimates

Figure 24: Global incremental supply to fall short of demand over 2016-18E



Source: Wood Mackenzie, IEA, Deutsche Bank estimates

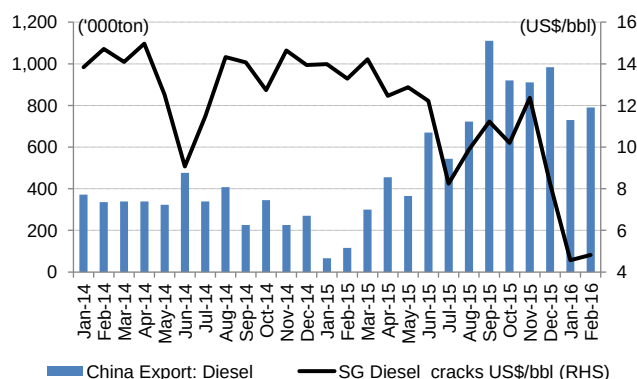


Diesel exports by Chinese refineries kept Asian diesel cracks under US\$10/bbl for a prolonged period in 2015. China net exported 461kbpd of diesel, kerosene and gasoline in January 2016, down by 37% MoM. Chinese diesel, kerosene and gasoline exports of 737kbpd (+112% YoY) in December 2015 were the highest ever.

Conversely, rising Chinese diesel exports would temper the upside to Asian refining margins over the next few years. Reportedly (Reuters), China has more than doubled its first round oil product export quotas to 20.93m tons in 2016 from a year ago. It contrasted with the 9.75m tons released for the same period last year.

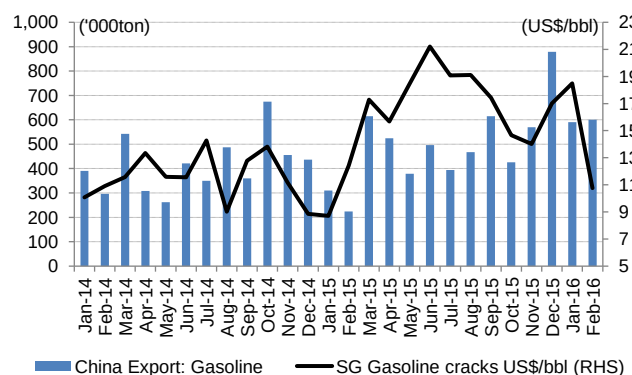
China has reportedly more than doubled its first round oil product export quotas to 20.93m tons in 2016

Figure 25: China diesel export vs. Asia diesel cracks



Source: Datastream, Deutsche Bank

Figure 26: China gasoline export vs. Asia gasoline cracks



Source: Datastream, Deutsche Bank

Figure 27: Global oil demand

Million bbl/day	2007	2008	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E
OECD demand												
Americas	25.9	24.6	23.7	24.2	24.0	23.6	24.1	24.1	24.4	24.3	24.3	24.2
Europe	15.5	15.5	14.7	14.7	14.3	13.8	13.7	13.4	13.7	13.6	13.6	13.5
Asia Oceania	8.6	8.3	7.9	8.1	8.1	8.5	8.3	8.2	8.1	8.1	8.1	8.1
Total	50.1	48.4	46.3	47.0	46.4	45.9	46.1	45.7	46.2	46.0	46.0	45.8
Non-OECD demand												
FSU	4.1	4.2	4.0	4.2	4.5	4.6	4.8	4.9	4.9	5.0	5.1	5.2
Europe	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
China	7.6	7.8	7.9	9.0	9.4	9.8	10.1	10.6	11.3	11.6	12.0	12.3
Other Asia	9.8	9.6	10.2	10.9	11.2	11.6	11.9	12.0	12.5	12.8	13.0	13.3
Americas	5.3	5.7	5.7	6.1	6.2	6.4	6.6	6.8	6.8	6.9	7.0	7.1
Middle East	6.4	6.9	7.2	7.3	7.5	7.8	7.9	8.1	8.2	8.4	8.6	8.8
Africa	3.1	3.3	3.5	3.6	3.6	3.8	3.8	4.0	4.1	4.2	4.4	45.5
Total	37.1	38.1	39.3	41.7	43.1	44.6	45.8	47.1	48.4	49.6	50.7	52.0
Global oil demand	87.2	86.5	85.6	88.7	89.5	90.6	91.9	92.8	94.5	95.6	96.7	97.8
Refining consumption	87.2	86.5	85.6	88.7	89.5	90.6	91.9	92.8	94.5	95.6	96.7	97.8

Source: US DOE/EIA, IEA, Deutsche Bank estimates



Figure 28: Global oil refining capacity expansion

(kbpd)	2015E	2016E	2017E	2018E	2019E	2020E
Asia Pacific	33	195	474	201	100	1270
Russia and Caspian	15	20	-53	-58	49	49
Greater Europe	0	-55	-213	161	54	0
Latin America	30	92	5	8	123	30
Middle East	678	242	283	375	187	72
North America	130	217	142	105	9	0
Sub-Saharan Africa	19	19	0	0	0	0
Total	905	730	638	791	521	1421

Source: Deutsche Bank estimates

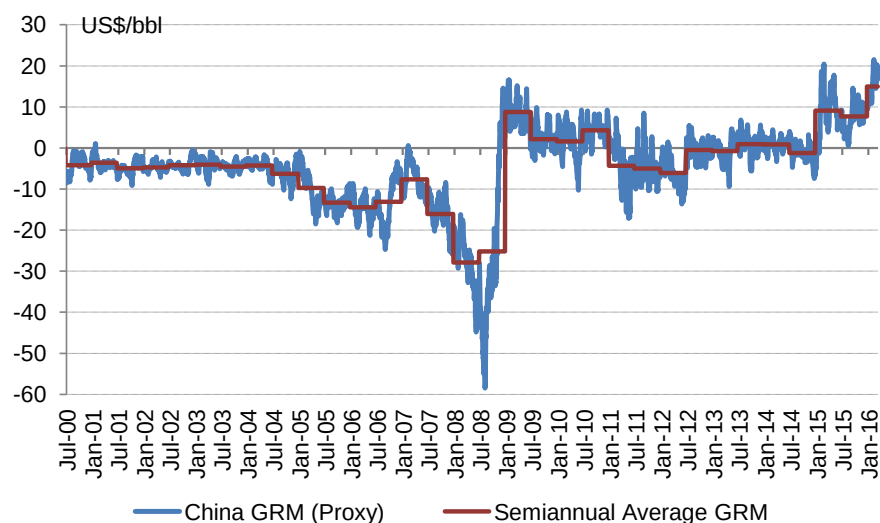
Robust China GRM outlook - stable margin when below US\$<80/bbl

According to the NDRC announcement in 2013, China refineries will earn an appropriate margin when crude oil prices are below US\$80/bbl. Our global commodity team expects oil prices to recover to a normalized level of US\$70/bbl by 2018. For the near term, we expect Brent crude to average US\$42.5/bbl in 2016 and US\$55/bbl in 2017. Therefore, we favor pure downstream oil companies in a low oil price environment, as we believe robust gross refining margin will continue.

We favor pure downstream oil companies in a low oil price environment as we believe robust gross refining margin will continue

China has been making progress on refined product pricing reforms, transforming it from a tightly controlled market to a partially free market now. Since March 2015, China kerosene has become marketable when it uses Singapore FOB prices as the pricing benchmark. Although China still controls gasoline and diesel prices, the government has decided it will not cut refined product prices when the China international cocktail crude oil benchmark price is below US\$40/bbl. This gives China an edge over seaborne refined products. This may boost SPC's 1H16 earnings if SPC is allowed to keep the extra profits; we have not factored in the potential extra profits in our earnings model. If we assume a US\$4.5/bbl extra profit in 1Q16E, it would translate into extra profit of RMB550m (c.15% of 2016E net income).

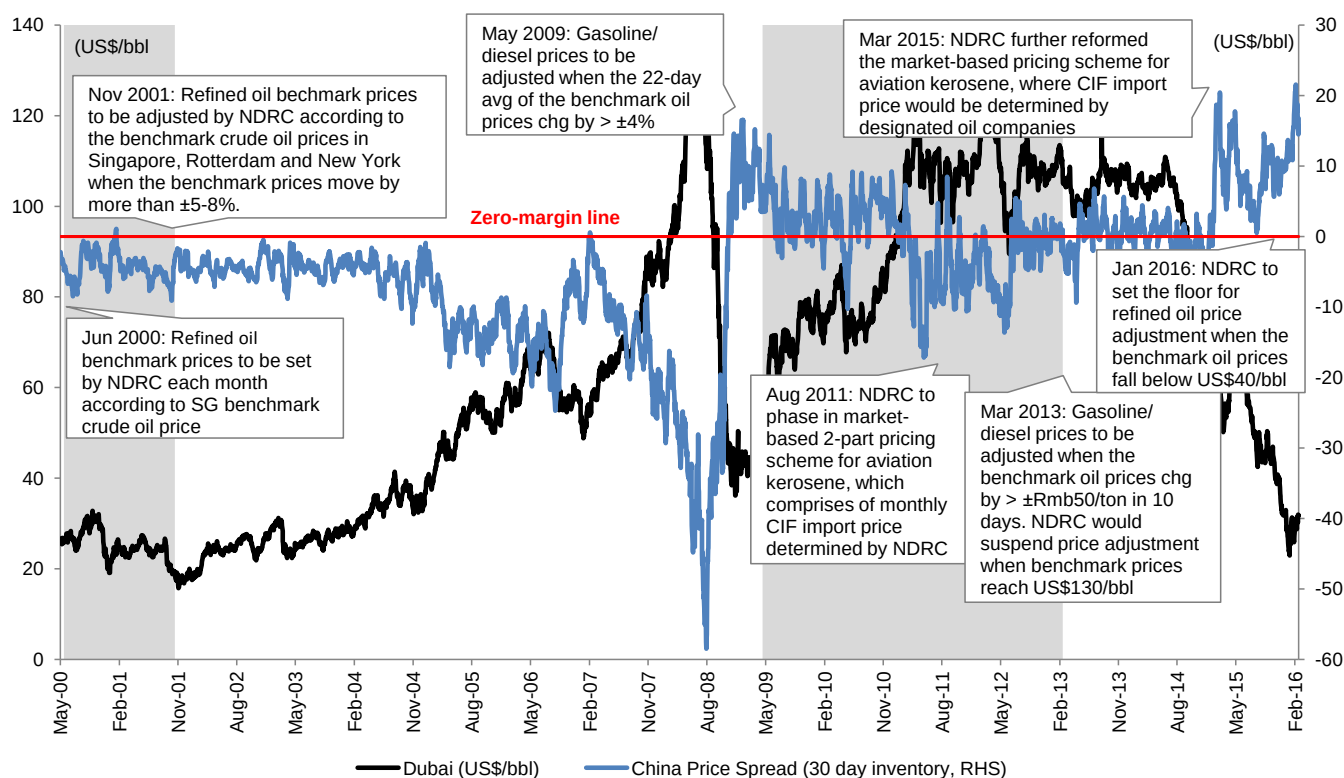
Figure 29: Uptrend of China GRM proxy (US\$/bbl)



Source: NDRC, Datastream, Deutsche Bank estimates



Figure 30: China GRM (Proxy) vs. Dubai crude oil price US\$/bbl



Source: NDRC, Datastream, Deutsche Bank estimates

Figure 31: Refined product reform roadmap

Year Refined product price adjustment policy

- Jun-98**
 - The government introduced the oil pricing mechanism, which links the domestic prices of crude oil and refined oil products to the benchmark crude oil price in Singapore.
 - The government would set the benchmark price for crude oil each month according to the average international crude oil prices in the previous month.
 - For gasoline and diesel, the government would set a guidance price, on which oil companies can adjust the prices within a fluctuation band of $\pm 5\%$.
- Jun-00**
 - Benchmark price for domestic refined oil to be set by the NDRC each month according to the benchmark crude oil price in Singapore
- Nov-01**
 - Domestic retail refined oil prices to be adjusted by the NDRC according to the benchmark crude oil prices in Singapore, Rotterdam and New York when the benchmark prices move by more than $\pm 5-8\%$.
- May-09**
 - Domestic gasoline and diesel prices to be adjusted by the NDRC when the 22-working day moving average of the benchmark international crude oil prices (Brent, Dubai and Cinto) change by more than $\pm 4\%$.
- Aug-11**
 - The NDRC to phase in market-based two-part pricing scheme for aviation kerosene, which comprises of the Cost, Insurance and Freightage (CIF) import price and the Agio. CIF import price would be determined by the NDRC each month based on the kerosene price in Singapore and logistic fees, while the Agio would be set by market participants annually based on market supply and demand, number of transactions and international oil price trends.
- Mar-13**
 - The 4% adjustment threshold on the benchmark international crude oil prices was abolished.
 - The NDRC would adjust the domestic gasoline and diesel prices when the benchmark international crude oil prices change by more than $\pm \text{Rmb}50/\text{tonne}$ in 10 working days.
 - Composition of the basket of international crude oil types would be adjusted according to trading activities.
 - The NDRC would adjust refined oil prices to allow an appropriate refining margin when benchmark prices fall below US\$80/barrel, and gradually cut margins when benchmark prices rise.
 - Price adjustment on refined oils would be suspended when benchmark prices reach above US\$130/barrel.
- Mar-15**
 - The NDRC further reformed the market-based pricing scheme for aviation kerosene. It would no longer set the Cost, Insurance and Freightage (CIF) import price of kerosene. Going forward, CIF import prices would be determined by oil companies including Sinopec, PetroChina, CNOOC and China Aviation Oil.
- Jan-16**
 - The NDRC to set the floor for the refined oil price adjustment when benchmark international oil prices fall below US\$40/barrel

Source: NDRC, Deutsche Bank



Product upgrades provide further upside to refining margin

We believe SPC will be able to lift its gross refining margin further in 2016 thanks to the Yangtze River Delta region's earlier adoption of GBV standard vehicle usage diesel in January 2016 (11 coastal provinces). A nationwide implementation will take place in January 2017. We expect the upgrade of fuel standards to provide further upside to SPC's refining margin with a spread of RMB160/ton price differential between GBIV and GBV diesel based on the NDRC's guidance prices.

After rounds of upgrades, SPC is capable of producing China GBV standards of gasoline and diesel in its refinery. Currently, gasoline produced by SPC meets the GBV standards while diesel achieves mainly the GBIV standards.

We expect upgrades of fuel standards to provide further upside to SPC's refining margin with a RMB160/ton price spread between GBIV & GBV diesel

Figure 32: China fuel oil standard

Stage	Gasoline				Diesel (vehicle)				Diesel (non-vehicle)			
	Implement ation Date	Nationwide Standard	Max Sulfur Content (ppm)	EU Standard equivalent	Implement ation Date	Nationwide Standard	Max Sulfur Content (ppm)	EU Standard equivalent	Implement ation Date	Nationwide Standard	Max Sulfur Content (ppm)	EU Standard equivalent
China GB I	Jan 2000	GB 17930-1999	1000		Jan 2002	GB 252-2000	2000		Jan 2002	GB 252-2000	2000	
China GB II	Jul 2005	GB 17930-2004	500		Oct 2003	GB/T 19147-2003	500					
China GB III	Jan 2010	GB 17930-2006	150	Euro-3 (2000)	Jul 2011	GB 19147-2009	350	Euro-3 (2000)	Jul 2013	GB 252-2011	350	
China GB IV	Jan 2014	GB 17930-2011	50	Euro-4 (2005)	Jan 2015	GB 19147-2013	50	Euro-4 (2005)	Jul 2017	GB 252-2015	50	
China GB V	Jan 2017*	GB 19147-2013 (Revised in 2015)	10	Euro-5 (2009)	Jan 2017*	GB 19147-2013 (Revised in 2015)	10	Euro-5 (2009)	Jan 2018	GB 252-2015	10	Euro-5 (Jan 2011)

Source: Standardization Administration of China, Deutsche Bank; Note: Current standard are shaded in Blue

11 coastal provinces supply GBV standard diesel in 2016

According to the State Council's Air Pollution Prevention and Action Plan in 2013, vehicle tail gas is a main source of pollutant, and a study conducted by the Chinese Academy of Science in 2014 suggests that vehicle tail gas is responsible for 22.2% of PM2.5 in Beijing air pollution. China moved forward the implementation of GBV on diesel to January 2017 from July 2017.

We believe that with increasing pressure from the media and the public, reducing air pollution has become a key focus for the Chinese government. After the State Council meetings held by Premier Li Keqiang on April 28, 2015, 11 coastal provinces were required to start to sell GBV standard vehicle diesel in January 2016. According to Xinhua news on 7 January 2016, following the sale of GBV diesel in the 11 provinces, the retail selling price was hiked to RMB160/ton as planned.

GBVI standard may implement in 2019

Moreover, with the NDRC setting a price floor for refined products in January 2016, the extra profit can be used as environment-protection fund and to fund further refined product upgrades. We believe China GB VI standard will roll out in 2017 with nationwide implementation in 2019. Although the extra profit generated may not be directly attributed to SPC's incomes, we see the arrangement providing a longer-term benefit to refiners including SPC, as refining margin is likely to improve after fuel standard upgrade.



SPC has started to invest in an alkylation unit to further upgrade its gasoline production. It has planned a capex of RMB300mn for the alkylation unit in 2016. With the upgrades, converting lower molecules fuels into gasoline would result in lower toxics blended in the gasoline. According to our estimates, a 300kton alkylation unit would cost c.RMB1.3bn of capex in 2016-2018E.

Figure 33: Overview of Chinese GB III – GB V standards on gasoline

	Unit		GB-III	GB-IV	GB-V
Octane Rating:					
RON		≧	93	95	95
AKI		≧	88	90	90
Density 20°C	kg/m3	≧	735-765	NA	725-760
Density 15°C	kg/m3	≧	NA	740-754	NA
Distillation Range:					
10% boiling point	°C		50-70	NA	50-70
50% boiling point	°C		90-110	NA	90-120
90% boiling point	°C		160-180	NA	160-190
Initial boiling point	°C		NA	24-40	NA
% evaporation at or below 100°C	% vol		NA	50-58	NA
% evaporation at or below 150°C	% vol		NA	83-89	NA
Final boiling point	°C		180-200	190-210	180-205
Residue	% vol		2%	2%	2%
Vapour pressure	kPa		55-65	56-60	55-65
Gum content	mg/100ml	≧	4.00	4.00	4.00
Induction period	min	≧	480.00	480.00	480.00
Sulfur content	mg/kg	≧	100-150	50.00	10.00
To pass either of:					
Doctor testing			Pass	NA	Pass
Mercaptan sulfur level	% mass	≧	0.001%	NA	0.001%
Copper Strip Corrosion Test (50°C, 3h)	level	≧	1	1	1
Water Soluble Acid & Alkali			0	0	0
Impurities and water content			0	0	0
Benzene content	% vol	≧	1%	1%	1%
Aromatics content	% vol	≧	40%	29-35%	35%
Olefin content	% vol	≧	30%	10%	25%
Oxygen content	% mass	≧	2.3%	1.0%	2.7%
Methanol content	% mass	≧	NA	NA	0.3%
Lead content	mg/L	≧	5.0	5.0	5.0
Iron content	mg/L	≧	10.0	NA	10.0
Manganese content	mg/L	≧	NA	NA	2.0
Copper content	mg/L	≧	NA	NA	1.0
Phosphorus content	mg/L	≧	NA	1.3	0.2

Source: Ministry of Environmental Protection, Deutsche Bank



Figure 34: Overview of Chinese GB III – GB V standards on diesel

	Unit		GB-III	GB-IV	GB-V
Cetane number		≧	51	52-54	51
Colority		≧	3.5	NA	NA
Density 20°C	kg/m3		820-845	NA	815-845
Density 15°C	kg/m3		NA	833-837	NA
Distillation Range:					
50% boiling point	°C	≧	300	245	300
90% boiling point	°C	≧	355	NA	335-355
95% boiling point	°C		345-365	345-350	345-365
Final boiling point	°C	≧	NA	370	NA
Oxidation stability: Insoluble	mg/100ml	≧	2.50	2.50	2.50
Sulfur content	mg/kg	≧	350.00	50.00	10.00
Acidity	mgKOH/100ml	≧	7	NA	7
	mgKOH/g		NA	0.02	NA
10% carbon residue	% mass	≧	0.3%	0.2%	0.3%
Ash content	% mass	≧	0.01%	0.01%	0.01%
Water content	% vol	≧	Trace amt	0.02%	Trace amt
Copper Strip Corrosion Test(50°C 3h)	level	≧	1	1	NA
Impurities			0	0	0
Viscosity (20°C)	mm2/s	≧	4-6	NA	2-7.5
Viscosity (40°C)	mm2/s	≧	NA	2.3-3.3	NA
Melting point	°C	≧	0.00	NA	NA
Cold filter plugging point	°C	≧	4.0	-5.0	-5.0
Flash Point	°C	≧	55.0	55.0	55.0
Polycyclic Aromatic Hydrocarbons	% mass	≧	11%	3-6%	11%
Lubricity	μm	≧	460	400	460
Fatty Acid Methyl Ester	% vol	≧	NA	0.0%	0.5%

Source: Ministry of Environmental Protection, Deutsche Bank



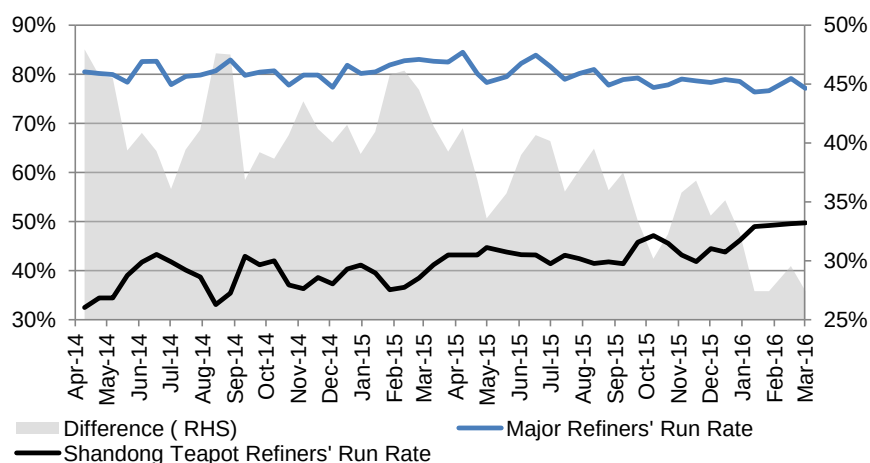
Ramp up of independent refineries not a threat to SPC

China independent refineries have started to import crude oil since 2015, in turn causing a big threat to the overall China market, as China major refiners' run rate dropped from 82% to 77% currently. Independent refiners' production ramp-up may cause overall major refiners' run rate to drop further.

With its regional advantage, SPC should be fairly immune to threats from independent refiners

However, we believe SPC has regional advantage, due to its demographic concentration in Shanghai, Zhejiang, and Jiangsu provinces, which accounts for 90% of SPC's revenue. We see the threat of Shandong / Guangdong / Shaanxi independent refiners having a limited impact on SPC's sales volume. SPC has a cost competitive advantage compared to independent refiners in terms of transportation and operating costs. Moreover, these provinces require GBV fuel standards while not all independent refineries are able to produce in GBV fuel standards at the current stage. SPC expects its 2016 refining throughput at 14.6m tons compared with 14.8m tons in 2015.

Figure 35: China major vs. independent refiners run-rates



Source: ICIS-C1 Energy, Deutsche Bank

Conversely, with the NDRC's floor price for refined products when benchmark crude oil prices go below US\$40/bbl, Chinese GRM has been higher than regional GRM. Hence, the incentive for independent refiners to export refined products was below expectations in 1Q16. According to ICIS, export refined products volume in 1Q16 is likely to be limited to 10kbbbls compared to the Shandong Ministry of Commerce's approved 330kbbbls for independent refiners.

Figure 36: Shandong MofCom approved refined product exports in 1Q16

Period	Refinery	Export quota (ton)			
		Total	Gasoline	Diesel	Kerosene
1Q16	Shandong Dongming	120,000	90,000	30,000	0
1Q16	Shandong Lili	20,000	20,000	0	0
1Q16	Dongying Yatong	40,000	40,000	0	0
1Q16	Sinochem Hongrun	150,000	100,000	50,000	0
Total		1,330,000	850,000	330,000	150,000

Source: ICIS, MofCom, Deutsche Bank



In addition, in order to apply for a crude oil import quota, independent refiners are required to either retire old low-inefficient capacity or to upgrade to GBV standards. This facilitates supply-side reforms on refining capacity. In our view, improving the China utilization rate would provide better refining margins in the long run. According to CNPC ETRI, China independent refining capacity would drop by c.21m tons by the end of 2016.

According to CNPC ETRI, China independent refining capacity would drop by c.21m tons by end-2016.

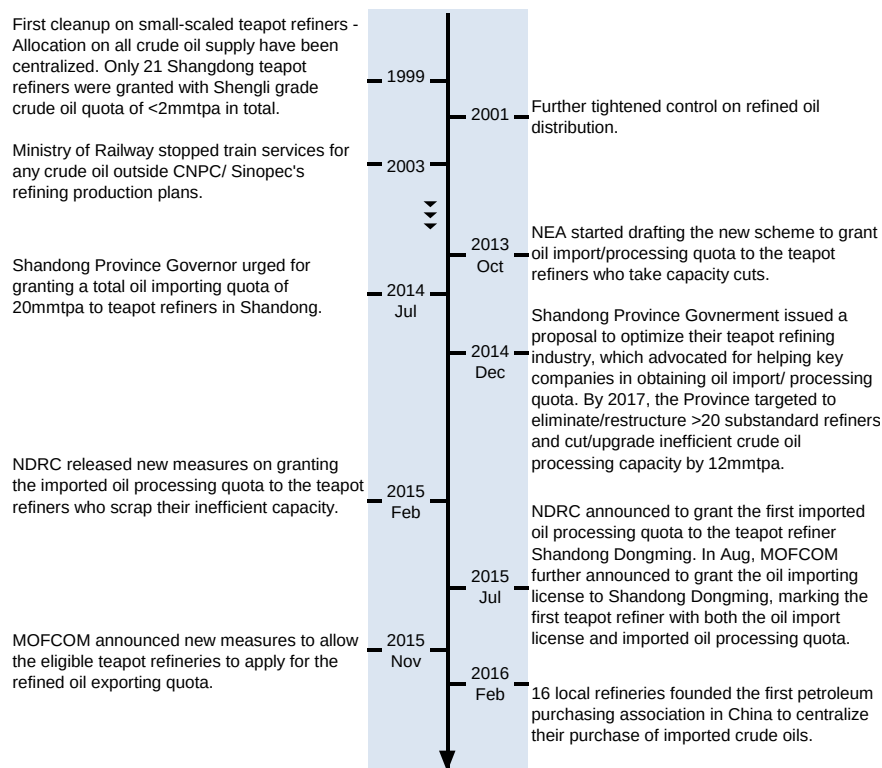
Figure 37: China Independent Refiners with license for processing imported oil

Approval Date	Refinery	Province	Original Capacity	Capacity cut	Remaining Capacity		Quota of imported crude oil usage	
			(mmtpa)	(mmtpa)	(mmtpa)	(bbl/ day)	Applied	Approved
Jul-15	Shandong Dongming	Shandong	11.00	3.50	7.50	150,000	7.50	7.50
Aug-15	Panjin Beifang Asphalt	Liaoning	10.50	3.50	7.00	140,000	7.00	7.00
Sep-15	Sinochem Hongrun	Shandong	6.70	1.00	5.70	114,000	5.30	5.30
Sep-15	Shandong Lili	Shandong	6.00	2.50	3.50	70,000	3.50	3.50
Sep-15	Shandong Kenli	Shandong	5.10	2.10	3.00	60,000	2.52	2.52
Sep-15	Dongying Yatong	Shandong	5.20	1.70	3.50	70,000	3.36	2.76
Sep-15	Baota Shihua	Ningxia	8.70	1.20	7.50	150,000	6.16	6.16
Dec-15	Shandong Huifeng	Shandong	7.60	1.80	5.80	116,000	4.16	4.16
Dec-15	Shandong Tianhong	Shandong	5.00	0.00	5.00	100,000	4.40	4.40
Dec-15	Shandong Jingbo	Shandong	5.80	2.30	3.50	70,000	3.31	3.31
Dec-15	Shandong Shouguang	Shandong	3.25	0.25	3.00	60,000	2.58	2.58
Jan-16	Dongying Qirun	Shandong	2.20	0.00	2.20	44,000	2.20	2.20
Pending	Shandong Haiyou	Shandong	4.10	0.60	3.50	70,000	3.20	Prelim approved by CPCIF
Pending	Shaanxi Yanchang	Shaanxi	20.40	3.00	17.40	348,000	3.60	Pending
Pending	Hengyuan Petrochemical	Shandong	3.80	1.30	2.50	50,000	3.72	Pending
Pending	Shandong Qingyuan	Shandong	5.20	2.50	2.70	54,000	4.62	Pending
Pending	Shandong Wudixinyue	Shandong	3.20	0.60	2.60	52,000	3.20	Pending
Pending	Henan Fengli	Henan	3.40	0.40	3.00	60,000	2.93	Pending
Pending	Shandong Jincheng	Shandong	5.90	3.80	2.10	42,000	4.56	Pending
Pending	Hebei Xinhai	Hebei	6.00	0.00	6.00	120,000	5.40	Pending
Pending	Shandong Shenchu	Shandong	2.60	2.10	0.50	10,000	2.52	Pending
Pending	Nanqiao Gangkou	Shandong	3.50	0.33	3.17	63,400	2.40	Pending
Pending	Shandong Zhonghai	Shandong	2.30	1.57	0.73	14,600	1.97	Pending
Total			137.45	36.05	101.40	2,028,000	90.10	51.39

Source: NDRC Deutsche Bank



Figure 38: Timeline of teapot refiners policy



Source: NDRC, NEA, Ministry of Commerce, Ministry of Railway, Shandong Province Government, Deutsche Bank



Chemical: Riding an up-cycle

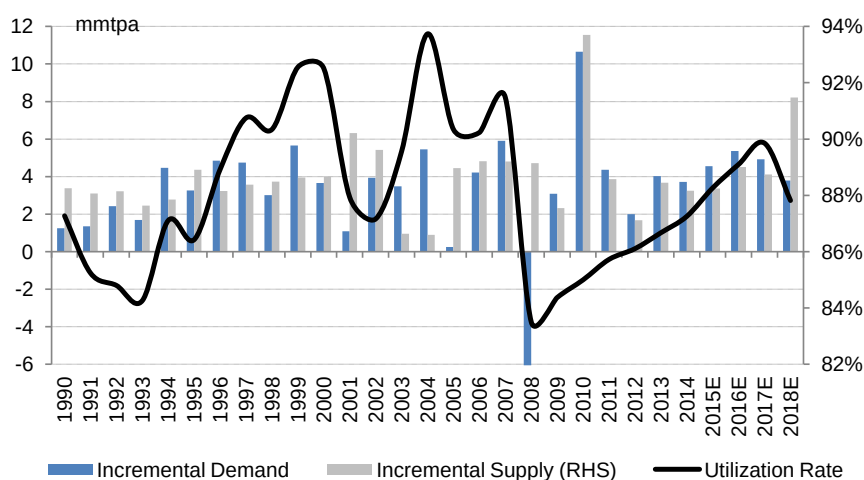
Tightening global ethylene supply and demand until 2017E

Our global ethylene capacity analysis demonstrates that global expansion plans are favorable for an ethylene up-cycle for the next four years due to: 1) start-up troubles in China CTO (coal-to-chemical) projects, due to a worsening in economics, and 2) ongoing delays from North American gas-based crackers. Hence, we expect global supply-demand to tighten through 2017, but lose ground to US gas-based crackers, which are set to come on stream in 2018. Please see [Asia Petrochemical report "Addressing the demand – it's not all about China" dated Oct 1, 2015 by Shawn Park](#) for details

By 2017, we expect the global ethylene utilization rate to peak at 89.9%, the highest level since 2007. However, the new US gas crackers expected to come on stream in 2018 should lower the run rate to 87.8%. At the same time, we believe that if oil prices stay at US\$40-50/bbl levels, there could be further delays in the expansion plans from China and the US.

By 2017, we expect the global ethylene utilization rate to reach c. 90%.

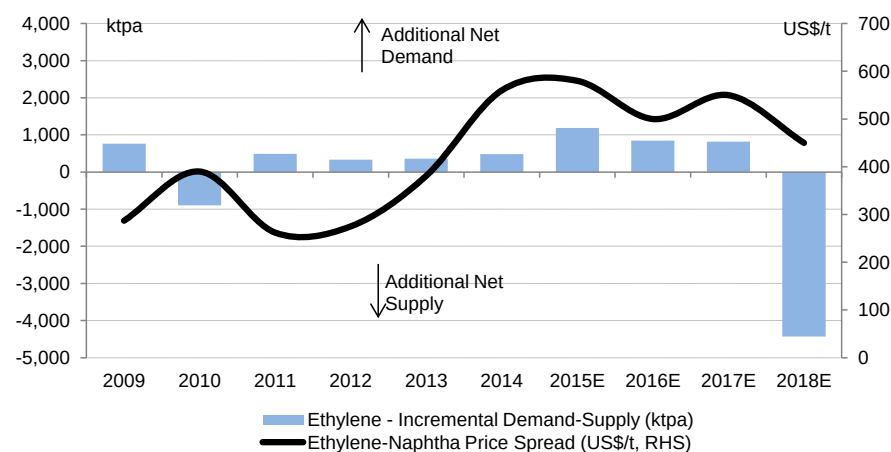
Figure 39: Global ethylene addition supply, demand & utilization (1990-2018E)



Source: IHS Chemicals, ICIS, Bloomberg Finance LP, Deutsche Bank estimates



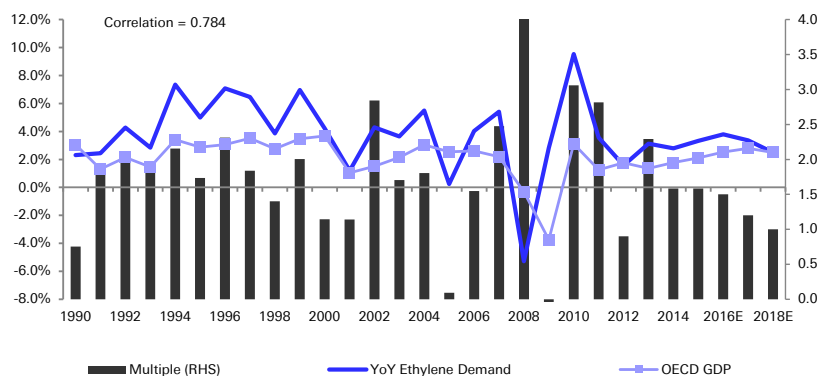
Figure 40: Ethylene addition supply-demand balance (2005-2018E)



Source: IHS Chemicals, ICIS, Bloomberg Finance LP, Deutsche Bank estimates

Our ethylene demand assumptions are based on OECD GDP, where ethylene demand has a 0.784 correlation with OECD demand for the last two decades. We believe that OECD GDP better reflects global petrochemical demand growth where petrochemicals are intermediate goods that are converted into finished goods and largely exported to OECD countries in Asia.

Figure 41: Ethylene demand and OECD demand outlook comparison



Source: IHS Chemicals, ICIS, Deutsche Bank estimate



China's new CTO/MTO capacity is at risk

With regard to China's upcoming olefins capacity, we believe that there is significant risk of delay and cancellation for the coal-to-olefins (CTO) capacity in 2016-2017 as coal to chemicals are losing competitiveness to naphtha chemical crackers (NCC) due to low oil prices. According to our analysis, NCC nearby coastal ethylene cash production cost is at about a 19% discount to CTO manufacturers.

Our analysis shows NCC nearby coastal ethylene cash production cost is at c. 19% discount to CTO manufacturers.

Figure 42: China NCC vs. CTO cost structure at current commodity price

Inner Mongolia self-owned coal mines CTO			Eastern China Naphtha Cracker		
Total Production cost for olefins product = (a)+(c)+(d)+(e)+(f)+(g)+(h)-(b)			Total Production cost for olefins product = (a)+(c)+(d)+(e)+(f)+(g)+(h)-(b)		
Production cost per ton olefins	3,550.96	RMB/ton olefins	2,895.36	RMB/ton olefins	
	542.70	US\$/ton olefins	442.51	USD/ton olefins	
(a) Feedstock Cost			(a) Feedstock Cost		
Coal used for feedstock			Naphtha used for feedstock		
Coal price (ex-plant)	140.00	RMB/ton coal	Naphtha price (ex-plant)	229.01	RMB/bbl naphtha
Coal price (ex-plant)	21.40	US\$/ton coal	Naphtha price (ex-plant)	35.00	US\$/bbl naphtha
Coal consumption per ton methanol	1.40	ton coal/ton olefins	Naphtha consumption per ton olefins	30.80	bbl naphtha/ton olefins
Coal feedstock cost per ton methanol	196.00	RMB/ton MeOH			
Methanol consumption per ton olefins	3.00				
Total feedstock cost per ton olefins	588.00	Rmb/ton olefins	Total feedstock cost per ton olefins	7,053.46	Rmb/ton olefins
(b) Credit by-product sales			(b) Credit by-product sales		
NA	NA.		Propylene (0.581 tons / ton olefins)	1,891	RMB/ton olefins
NA	NA.		Crude C4s (0.381 tons / ton olefins)	1,271	RMB/ton olefins
NA	NA.		Pygas (0.803 tons / ton olefins)	1,617	RMB/ton olefins
NA	NA.		Fuel (25.543 tons / ton olefins)	760	RMB/ton olefins
NA	NA.		Prolysis fuel oil (0.168 ton / ton olefins)	170	RMB/ton olefins
Total by-product sales	0.00		Total by-product sales	5,709	RMB/ton olefins
(c) Electricity			(c) Electricity		
Total electricity cost per ton olefins	736.71	RMB/ton olefins	Total electricity cost per ton olefins	138.45	RMB/ton olefins
(d) Depreciation and Labour			(d) Depreciation and Labour		
Total cost	600.00	RMB/ton olefins	Total cost	370.00	RMB/ton olefins
(e) Water usage			(e) Water usage		
Total Water cost per ton olefins	210.00	RMB/ton olefins	Total Water cost per ton olefins	31.20	RMB/ton olefins
(f) Effluent treatment cost			(f) Effluent treatment cost		
Total Effluent treatment cost per ton olef.	114.00	RMB/ton olefins	Total Effluent treatment cost per ton olef.	15.60	RMB/ton olefins
(g) Other cost			(g) Other cost		
Total fuel cost	830.00	RMB/ton olefins	Total fuel cost	996.00	RMB/ton olefins
(h) Transportation cost for olefins product			(h) Transportation cost for olefins product		
Total fuel cost	472.25	RMB/ton olefins	Total fuel cost	0.00	RMB/ton olefins

Source: Deutsche Bank estimates

We believe that China CTO projects are likely to experience delays or even cancellations, as a US\$40-50/bbl oil price implies challenges in capital costs for those projects that have not received NDRC approval. We believe that the CTO success rate would be in doubt because it also raises issues on water availability besides economics competitiveness. However, according to IHS Chemicals, CTO capacity would increase from the current 675ktpa to 5.5mtpa by 2018 (this estimate does not consider any potential cancellations).

Figure 43: China delayed projects

Company	Location	Capacity (ktpa)	Original timing	Delayed to
Qinghai Salt - CTO	Golmud, Qinghai, China	160	2Q15	2Q16
China Coal Mengda - MTO**	Inner Mongolia, China	300	3Q15	4Q15
Jilin Bohai Biochem	Jilin, Jilin, China	35	3Q15	1Q16
Jiutai Energy (IM) - MTO	Erds, Inner Mongolia, China	300	4Q15	3Q16
Fund Energy (Changzhou) - MTO	Changzhou, Jiangsu, China	175	4Q15	2Q16
SXYCPC-Yan'an Energy & Chem - CTO	Yan'an, Shaanxi, China	450	1Q16	3Q16
Jiangsu Sailboat PC - MTO	Lianyungang, Jiangsu, China	370	2Q16	3Q16
Qinghai Damei - CTO	Xining, Qinghai, China	200	3Q16	3Q17
Shanxi Coking Corp. - CTO	Hongtong, Shanxi, China	300	3Q16	3Q17
Zhong'an Coal Chem - CTO	Huainan, Anhui, China	300	3Q16	2Q17
Sinopec Hebi (Henan) - CTO**	Hebi, Henan China	300	1Q17	1Q19
China Coal Yuheng - CTO	Yuheng, Shaanxi, China	300	1Q18	2Q19
CPI/Total - CTO	Erds, Inner Mongolia, China	400	3Q18	2Q19

Source: Deutsche Bank, ICIS, IHS Chemicals, Bloomberg Finance LP; Note: ** - NDRC approved projects



Figure 44: Time-weighted ethylene capacity expansion start-up schedule ('000ton per annum)

Company	City	Country	Timing	Capacity (ktpa)	2016E	2017E	2018E	2019E
Mitsub. Chemical	Mizushima	Japan	4Q15	-493	-395	-143		
Chandra Asri PC	Cilegon	Indonesia	1Q16	260	216	44		
Braskem-Idesa JV	Nachital	Mexico	1Q16	1,050	872	179		
Jilin Bohai Biochem	Jilin	China	1Q16	47	39	8		
Shenhua Xinjiang - CTO	Urumqi	China	2Q16	270	45	63		
Asahi Kasei Mitsubishi Chem	Mizushima	Japan	2Q16	70	39	31		
Sanyo PC	Mizushima	Japan	2Q16	-504	-314	-190		
Fund Enervay (Changzh.) - MTO	Changzhou	China	2Q16	175	29	41		
Qinghai Salt - CTO	Golmud	China	2Q16	160	40	24		
Westlake	Lake Charles	United States	2Q16	113	55	58		
Petro-Rabigh	Rabigh	Saudi Arabia	2Q16	300	145	155		
Dow	Plaquemine	United States	3Q16	250	104	146		
Novy Urengoy GCC	Novy Urengoy	Russia	3Q16	420	174	246		
Equistar	Corpus Christi	United States	3Q16	363	151	212		
Kavayn PC	Bandar Assaluyeh	Iran	3Q16	0	0	0		
PTT Polyethylene	Map Ta Phut	Thailand	3Q16	120	50	70		
Zhongtian Hechuanq - CTO	Erdos	China	3Q16	670	74	194		
Jiangsu Sailboat PC - CTO	Lianyungang	China	3Q16	370	61	87		
SXYCPC-Yan'an E&C - CTO	Yan'an	China	3Q16	450	75	105		
Jiutai Energy (IM) - MTO	Erdos	China	3Q16	250	21	79		
Better Clean Enervay - MTO	Donqiyin	China	3Q16	120	20	28		
Qinghai Mining - CTO	Haixi	China	1Q17	0		0	0	
Reliance Industries	Jamnagar	India	1Q17	1,500		934	566	
Nova Chemical CAN	Sarnia	Canada	1Q17	168		139	29	
Versalis S.p.A.	Porto Marghera	Italy	1Q17	-490		-407	-83	
Dow	Freeport	United States	3Q17	1,500		415	1,085	
Zhong'an Coal Chem. - CTO	Huainan	China	2Q17	0		0	0	
Chevron Phillips	Cedar Bayou	United States	3Q17	1,500		415	1,085	
Oxy/Mexichem JV	Ingleside	United States	3Q17	545		151	394	
Qinghai Damei - CTO	Xining	China	3Q17	0		0	0	
Shanxi Coking Corp. - CTO	Hongtong	China	3Q17	0		0	0	
ExxonMobil	Baytown	United States	3Q17	1,500		415	1,085	
CNOOC	Huizhou	China	3Q17	1,000		277	723	
KPIC	Onsan	Korea (South)	3Q17	330		137	193	
Saudi Kayan	Al Jubail	Saudi Arabia	3Q17	95		26	69	
Shanghai PC	Jinshan	China	3Q17	600		166	434	
Guozhen-M&G JV	Fuyang	China	1Q18	195			162	33
Lotte Chem. (M)	Pasir Gudang	Malaysia	1Q18	92			76	16
Sinopec Zhiin - CTO**	Guizhou	China	1Q18	0			0	0
S-Oil	Onsan	Korea (South)	1Q18	200			166	34
Turkmengas	Kiyarly	Other CIS &	1Q18	400			332	68
Anqarsk Petchem	Anqarsk	Russia	1Q18	150			125	26
Huahong Huijin - CTO**	Gansu	China	2Q18	0			0	0
Ilam PC	Ilam	Iran	2Q18	458			211	247
Baotou Shenhua - CTO	Baotou	China	3Q18	0			0	0
SASOL	Lake Charles	United States	2Q18	1,550			750	800
FPC USA	Point Comfort	United States	3Q18	1,200			498	702
Equistar	Channelview	United States	3Q18	250			104	146
Shin-Etsu	Plaquemine	United States	3Q18	500			208	293
Sinopec Hainan R&C	Hainan	China	1Q19	1000				830
Sinopec Hebi - CTO**	Hebi	China	1Q19	0				0
CPI/Total JV - CTO**	Erdos	China	2Q19	0				0
China Coal Yuheng - CTO	Yuheng	China	2Q19	0				0
Yili Meidianhua - CTO	Yili	China	2Q19	0				0
Total incremental supply					4,511	4,105	8,212	3,195
CTO / MTO incremental supply					623	621	0	0
CTO / MTO as % of total incremental supply					14%	15%	0%	0%

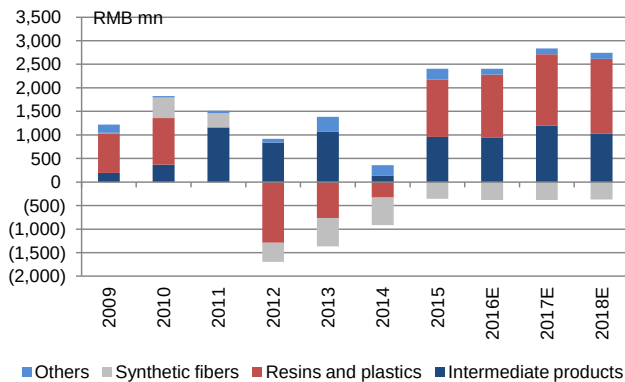
Source: IHS Chemicals, ICIS, Bloomberg Finance LP, Deutsche Bank estimates; Note: ** - NDRC approved projects; highlighted are China CTO/MTO projects



Beneficiary of chemical up-cycle

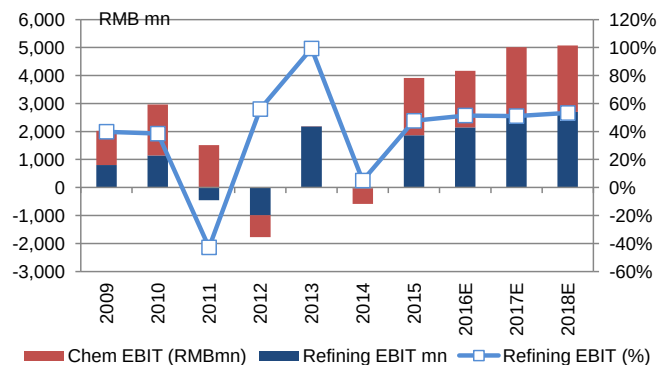
SPC generated 52% of its operating income in 2015 from the chemical business. We expect the overall chemical segment to be stable, achieving RMB2.0/2.5/2.4bn operating profit in 2016E/17E/18E, representing a 5% CAGR over 2015-18E. We see its chemical business' contribution to operating profits declining marginally to 49%/49%/47% in 2016E/17E/18E.

Figure 45: Chemical EBIT breakdown (RMBmn)



Source: Company data, Deutsche Bank estimates

Figure 46: Chemical EBIT/ton



Source: Company data, Deutsche Bank estimates

We are positive on ethylene, where we see tightening in the ethylene supply/demand balance. The net balance of supply/demand is expected to be tightened by net demand of +845/+816mntonpa in 2016E and 2017E. On the other hand, we expect the utilization rate of most downstream products to drop in 2016E with additional capacity. So we expect SPC's chemical EBIT per ton to decline by -10% YoY in 2016E.

However, we expect the utilization rate of downstream products 2017E to improve for most products; hence, SPC's chemical EBIT per ton should be lifted by +16% YoY, and exceed the 2015 level. SPC's chemical segment should earn EBIT per ton of US\$79/US\$92/US\$87/US\$78 in 2016E/17E/18E/long-term.

We expect SPC's chemical segment to earn an EBIT of US\$78/t in long term.

Figure 48: Global petrochemical products utilization rate

Utilization rate	2009	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E
Ethylene	84%	85%	86%	86%	87%	87%	88%	89%	90%	88%
LDPE	84%	84%	83%	83%	83%	84%	83%	80%	81%	79%
LLDPE	81%	80%	82%	84%	84%	86%	85%	85%	83%	83%
HDPE	83%	83%	83%	84%	84%	84%	84%	82%	82%	82%
EG	84%	83%	88%	90%	88%	87%	87%	89%	91%	88%
PVC	83%	86%	85%	85%	87%	85%	85%	85%	85%	85%
PP	82%	85%	83%	84%	83%	84%	83%	82%	84%	84%
ABS	78%	84%	82%	78%	77%	77%	79%	82%	85%	87%
PS	83%	86%	84%	83%	82%	80%	80%	81%	82%	83%
Benzene	76%	76%	75%	75%	74%	74%	74%	75%	76%	76%
Butadiene	75%	78%	79%	79%	77%	75%	74%	74%	76%	77%
ESBR	58%	62%	64%	60%	58%	58%	58%	60%	63%	65%
SSBR	76%	81%	82%	75%	70%	66%	61%	58%	58%	59%
Total SBR	62%	66%	67%	64%	61%	60%	59%	60%	62%	63%
BR	73%	80%	82%	77%	72%	68%	67%	66%	66%	67%
PX	82%	84%	84%	86%	87%	82%	77%	73%	73%	73%
PTA	83%	90%	89%	86%	78%	75%	72%	69%	69%	71%
PET	80%	85%	85%	82%	76%	72%	68%	68%	68%	70%

Source: IHS Chemicals, ICIS, Bloomberg Finance LP, Deutsche Bank estimates; Note: Red - Net supply increase; Blue - Net demand increase

Figure 47: SPC facility profile (FY14)

Capacity	ktpa
Intermediate petrochemicals	
Ethylene units	850
PX (Aromatics) unit	835
PTA unit	400
EO/EG unit	525
Acrylonitrile unit	130
C5 segregation unit	205
Resins and plastics	
Polyester units	550
PE units	408
PP units	400
Vinyl acetate unit	86
Synthetic fibers	
Polyester staple units	158
Polyester filament units	21
Acrylic staple fiber units	141

Source: Company, Deutsche Bank

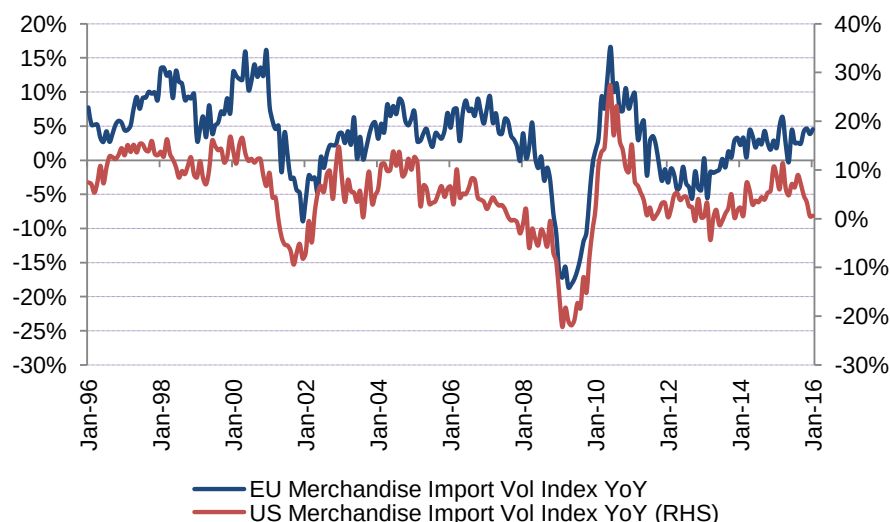


Selectively positive on downstream products

For downstream products, we are selectively positive. We are particularly impressed with the fundamentals improvement in the non-polyolefins chemical chain, in particular to ABS and ESBR. However, SPC does not have strong exposure in aromatics, except for benzene. On the other hand, we see a strong product spread for MEG and some selective resins and plastic products. Considering that we expect the merchandise import volume of the US and EU to remain decent going forward, we also expect global petrochemical demand growth to remain healthy, at a 3.2% CAGR in 2015-18E.

We expect global petrochemical demand to see a 3.2% CAGR in 2015-18E.

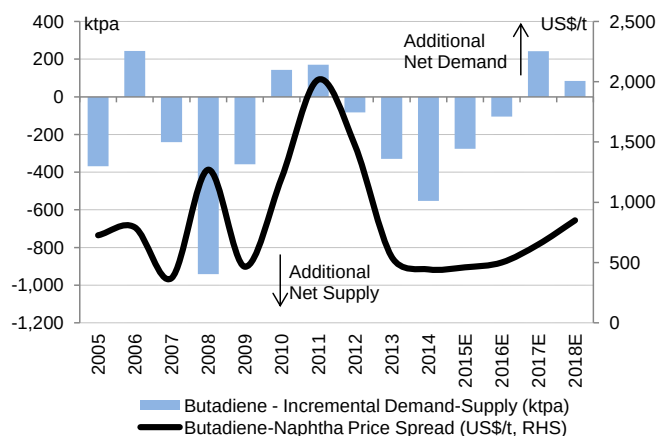
Figure 49: US & EU merchandise import volume growth trend



Source: Bloomberg Finance LP, Deutsche Bank

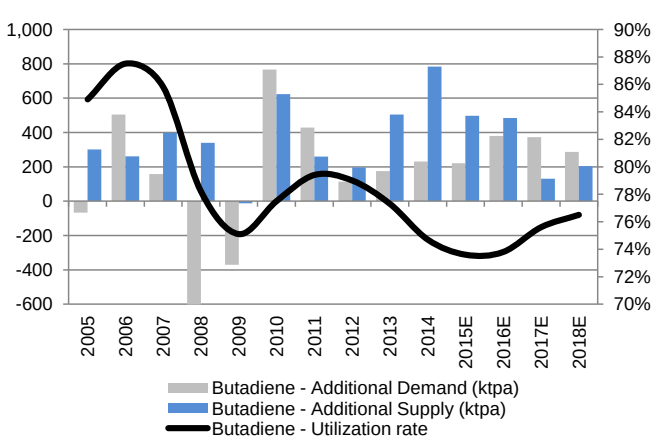
Intermediate product: supply-demand vs. price spread

Figure 50: Butadiene – supply-demand vs. price spread



Source: Deutsche Bank estimates, IHS Chemicals, ICIS, Bloomberg Finance LP

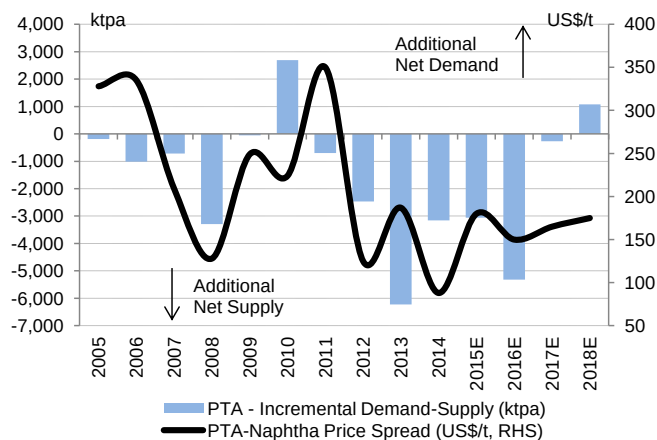
Figure 51: Butadiene – supply-demand vs. utilization



Source: Deutsche Bank estimates, IHS Chemicals, ICIS, Bloomberg Finance LP

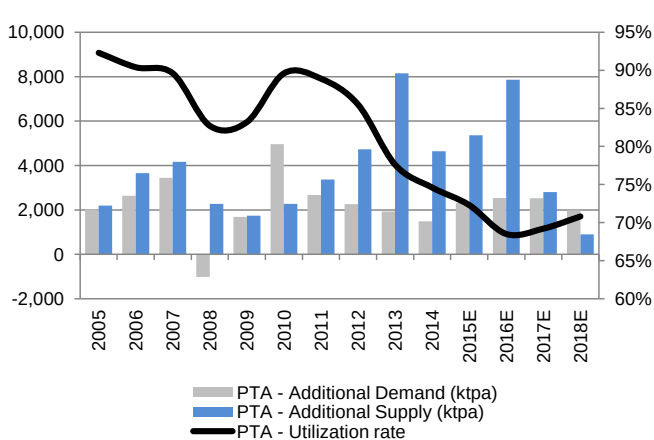


Figure 52: PTA – supply-demand vs. price spread



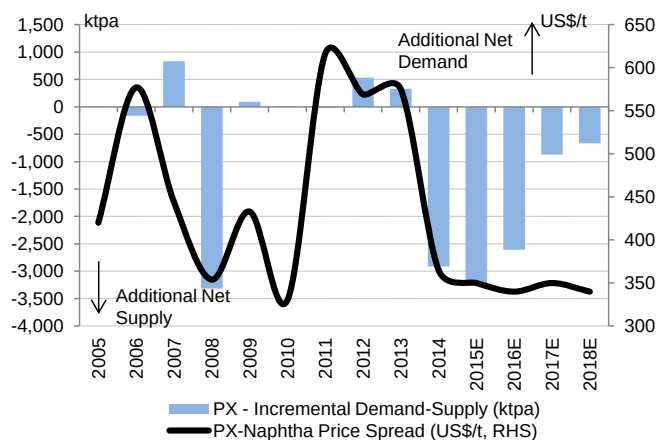
Source: Deutsche Bank estimates, IHS Chemicals, ICIS, Bloomberg Finance LP

Figure 53: PTA – supply-demand vs. utilization



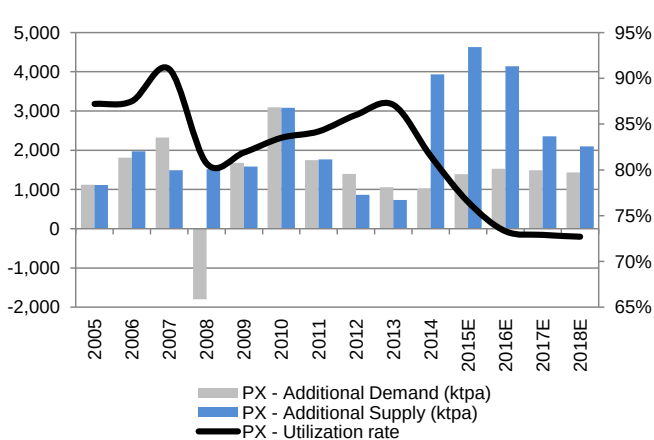
Source: Deutsche Bank estimates, IHS Chemicals, ICIS, Bloomberg Finance LP

Figure 54: PX – supply-demand vs. price spread



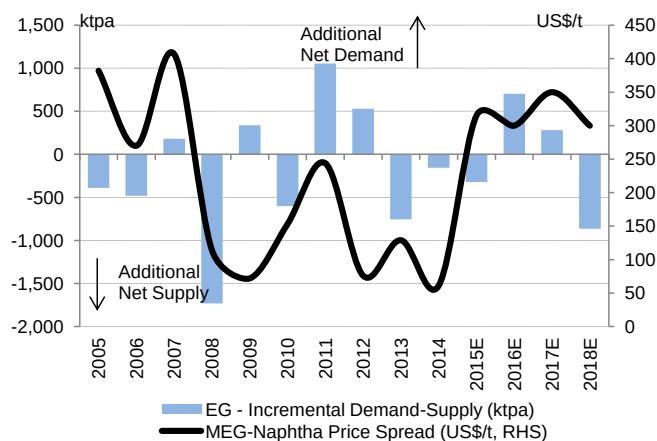
Source: Deutsche Bank estimates, IHS Chemicals, ICIS, Bloomberg Finance LP

Figure 55: PX – supply-demand vs. utilization



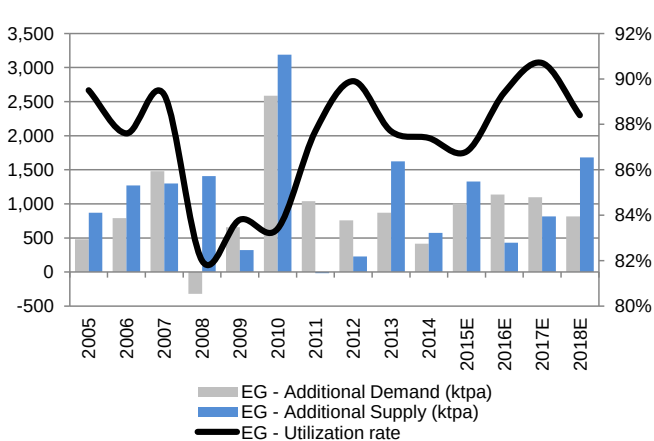
Source: Deutsche Bank estimates, IHS Chemicals, ICIS, Bloomberg Finance LP

Figure 56: EG – supply-demand vs. price spread



Source: Deutsche Bank estimates, IHS Chemicals, ICIS, Bloomberg Finance LP

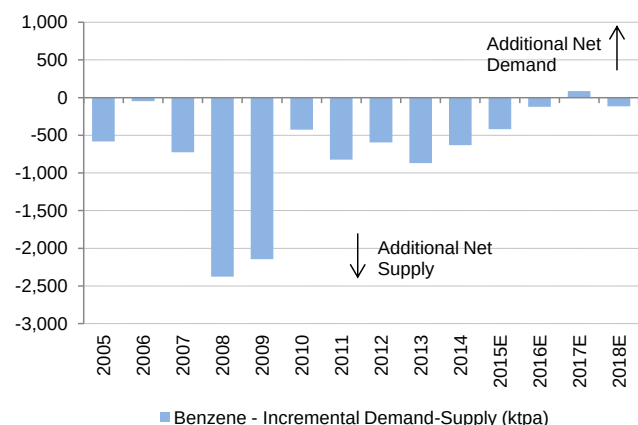
Figure 57: EG – supply-demand vs. utilization



Source: Deutsche Bank estimates, IHS Chemicals, ICIS, Bloomberg Finance LP

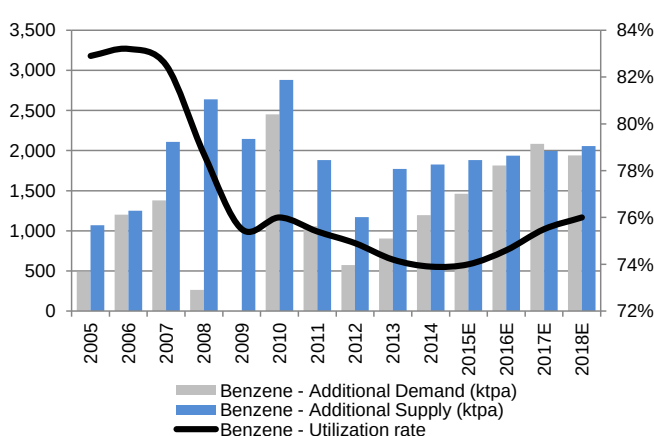


Figure 58: Benzene – supply-demand vs. price spread



Source: Deutsche Bank estimates, IHS Chemicals, ICIS, Bloomberg Finance LP

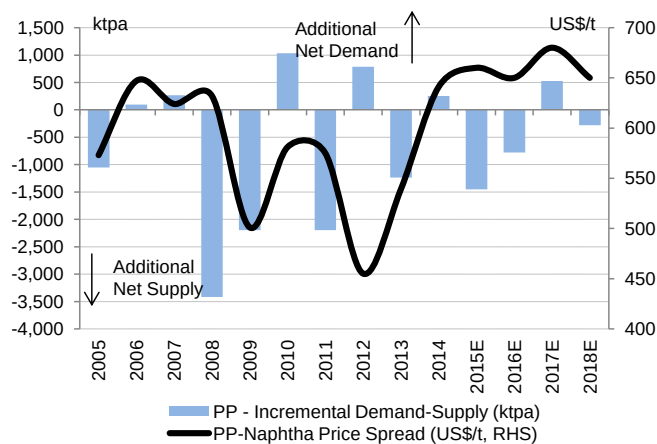
Figure 59: Benzene – supply-demand vs. utilization



Source: Deutsche Bank estimates, IHS Chemicals, ICIS, Bloomberg Finance LP

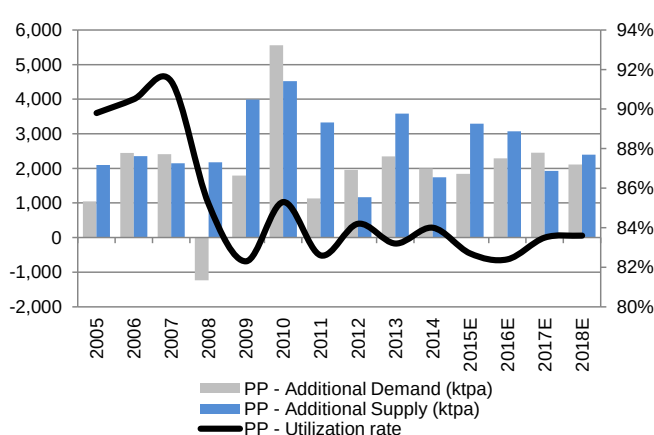
Resins and Plastics: supply-demand vs. price spread

Figure 60: PP – supply-demand vs. price spread



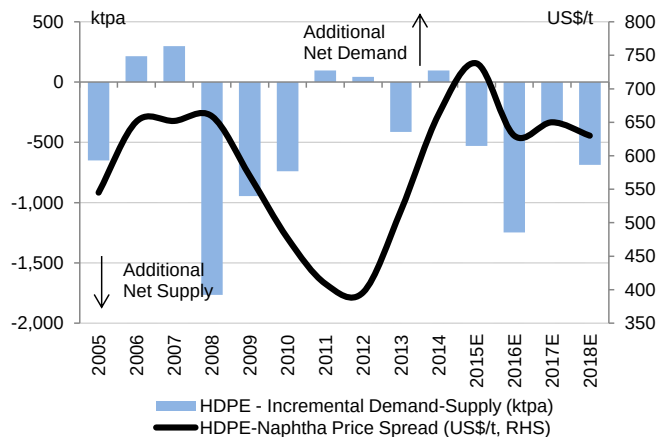
Source: Deutsche Bank estimates, IHS Chemicals, ICIS, Bloomberg Finance LP

Figure 61: PP – supply-demand vs. utilization



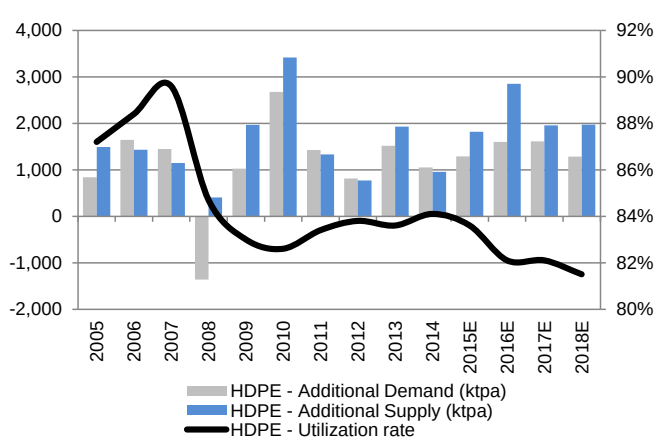
Source: Deutsche Bank estimates, IHS Chemicals, ICIS, Bloomberg Finance LP

Figure 62: HDPE – supply-demand vs. price spread



Source: Deutsche Bank estimates, IHS Chemicals, ICIS, Bloomberg Finance LP

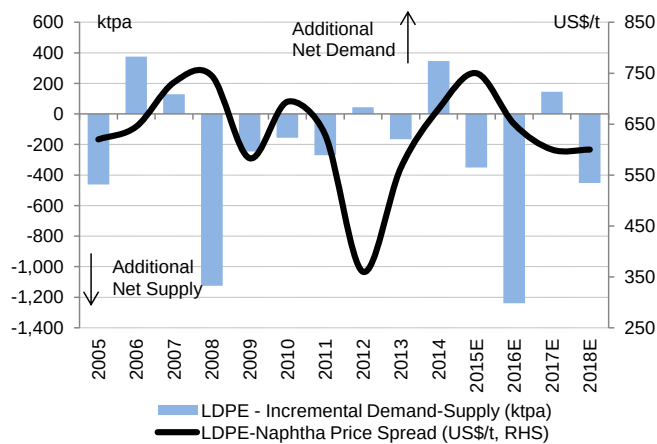
Figure 63: HDPE – supply-demand vs. utilization



Source: Deutsche Bank estimates, IHS Chemicals, ICIS, Bloomberg Finance LP

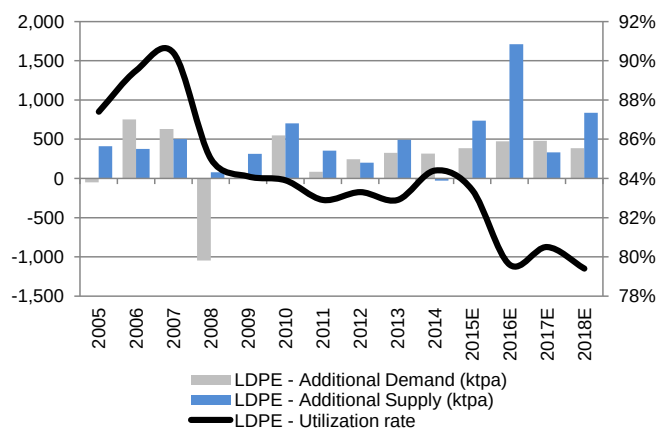


Figure 64: LDPE – supply-demand vs. price spread



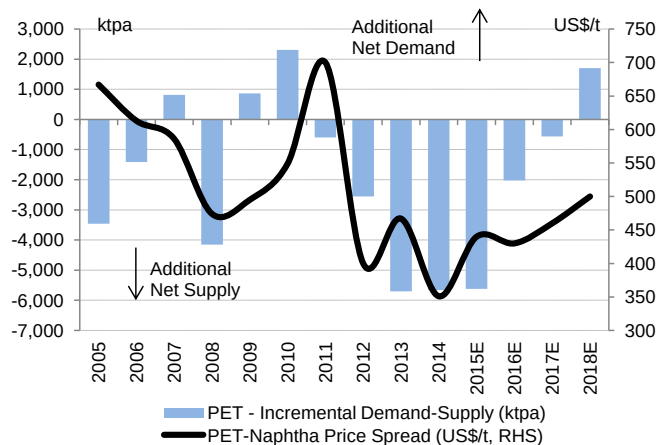
Source: Deutsche Bank estimates, IHS Chemicals, ICIS, Bloomberg Finance LP

Figure 65: LDPE – supply-demand vs. utilization



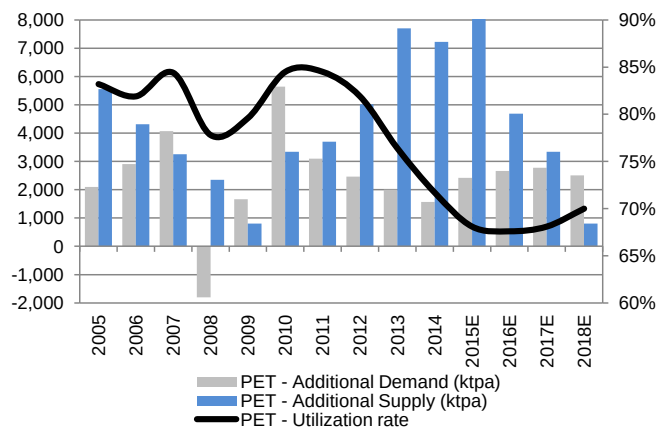
Source: Deutsche Bank estimates, IHS Chemicals, ICIS, Bloomberg Finance LP

Figure 66: PET – supply-demand vs. price spread



Source: Deutsche Bank estimates, IHS Chemicals, ICIS, Bloomberg Finance LP

Figure 67: PET – supply-demand vs. utilization



Source: Deutsche Bank estimates, IHS Chemicals, ICIS, Bloomberg Finance LP



Key assumptions and financials

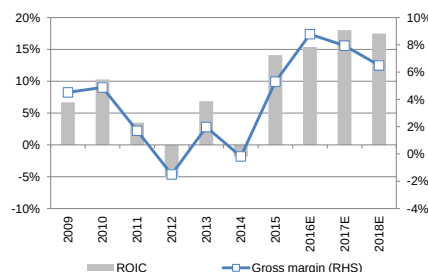
Income statement

SPC generates its revenue and earnings primarily from two segments – refining and chemicals. In 2015, SPC's operating profit was split 48% and 52% between refining and chemicals. We expect 2016E gross margin to improve further to 9% from -2% in 2012, driven by the drop in feedstock costs. We forecast SPC's ROIC to improve from 14.1% in 2015 to 17.5% in 2018E.

Looking forward, we expect refining EBIT per ton to improve from US\$2.7/bbl in 2015 to US\$3.6/bbl in 2018E due to the product standard upgrade in China. Moreover, our refining margin only consists of normalized operating margins, i.e., we do not factor in the extra profit from product floor prices when the oil price is below US\$40/bbl, and inventory gains. For sensitivity purposes, if we assume a US\$4.5/bbl extra profit in 1Q16E, it would translate into net income of RMB550m (c.15% of 2016E net income). We expect refining EBIT to increase from RMB1.9bn in 2015 to RMB2.7bn in 2018E, at a CAGR of 13%. For chemical, we expect chemical EBIT per ton to be stable in 2016-18E, averaging US\$86/ton vs. US\$88/ton in 2015 (or averaging US\$8.1/ton in 2012-15). Among chemical products, we expect intermediate products/resins and plastic EBIT per ton margin to register a CAGR of -1%/+1%, respectively, in 2016-18E.

Moreover, with the company granting stock options to management in 2014, we believe there is a better alignment of management's and shareholders' interests, and expect improvement in efficiency through cost-saving strategies.

Figure 68: ROIC & gross margin



Source: Company data, Deutsche Bank estimates

Figure 69: Earnings assumptions

		2013	2014	2015	2016E	2017E	2018E
Refining							
Crude oil processed (reported)	'000 MT	15,668	14,170	14,795	14,600	14,800	14,800
Brent crude oil price	US\$/bbl	108.9	98.9	52.4	42.5	55.0	70.0
GRM	US\$/bbl	4.8	4.2	7.0	6.4	7.0	7.2
EBIT/ton	US\$/ton	3.1	0.0	2.7	2.9	3.4	3.6
Chemicals							
ASP							
Intermediate products	US\$/ton	1,178	1,021	687	657	721	750
Resins and plastics	US\$/ton	1,540	1,534	1,209	1,159	1,235	1,306
Synthetic fibers	US\$/ton	2,089	2,052	1,668	1,554	1,598	1,710
Sales Volume							
Intermediate products	'000 MT	2,545	1,969	2,162	2,123	2,150	2,150
Resins and plastics	'000 MT	1,507	1,321	1,316	1,382	1,435	1,488
Synthetic fibers	'000 MT	251	229	222	238	238	238
Per ton EBIT							
Intermediate products	US\$/ton	68.0	10.9	70.5	65.1	79.4	68.5
Resins and plastics	US\$/ton	-82.7	-40.7	147.5	141.2	151.1	152.4
Synthetic fibers	US\$/ton	-98.1	-94.4	-56.8	-55.6	-54.6	-53.0

Source: Company data, Deutsche Bank estimates



Figure 70: Income statement (RMB mn)

	2013	2014	2015	2016E	2017E	2018E
Revenue	115,490	102,126	80,748	76,801	90,214	102,505
Sales taxes and surcharges	-9,987	-9,401	-13,711	-13,041	-15,318	-17,405
Cost of Goods Sold	-103,226	-92,910	-62,757	-57,012	-67,732	-78,448
Gross Profit	2,277	-185	4,280	6,748	7,163	6,653
GPM (%)	2%	0%	5%	9%	8%	6%
SG&A	-691	-564	-601	-422	-496	-564
EBIT	2,192	-588	3,909	4,172	5,015	5,072
EBITDA	4,744	1,699	5,954	6,066	6,788	6,854
Investment income	131	58	572	566	686	663
Total Financial Costs	122	-360	-244	-43	44	176
Profit before tax	2,445	(890)	4,237	4,695	5,746	5,911
Income tax	-379	214	-927	-1,032	-1,265	-1,312
Effective tax rate (%)	-16%	-24%	-22%	-22%	-22%	-22%
Profit after tax	2,066	-676	3,310	3,663	4,481	4,599
Minority income	-10	-16	-36	-40	-49	-50
Net income	2,055	-692	3,274	3,623	4,432	4,549
EPS (RMB/share)	0.23	-0.06	0.30	0.34	0.41	0.42
Growth (%)	N/A	N/A	N/A	11%	22%	3%
DPS (RMB/share)	0.05	0.00	0.10	0.10	0.12	0.13
Payout (%)	26%	0%	33%	30%	30%	30%

Source: Company data, Deutsche Bank estimates

Figure 71: Key ratios

	2013	2014	2015	2016E	2017E	2018E
Invested capital	25,580	22,203	21,087	21,231	22,145	22,985
ROIC	6.9%	-1.9%	14.1%	15.4%	18.0%	17.5%
Net Debt	7,589	5,432	993	-1,440	-3,677	-6,071
Equity	17,992	16,772	20,094	22,670	25,822	29,056
Net gearing (%)	42.2%	32.4%	4.9%	-6.4%	-14.2%	-20.9%

Source: Company data, Deutsche Bank estimates



Share stock option incentive scheme

SPC's Stock Option Incentive Scheme was approved in Dec 2014. The scheme aims to grant stock options to senior management and key business personnel based on the fulfillment of personal performance criteria and the company's financial criteria.

The duration of the stock option scheme will be 10 years, with each batch of stock options granted at two-year intervals. We believe the scheme will help to lift SPC's efficiency by aligning employees' interests with company performance.

We believe the stock option incentive scheme will help to lift SPC's efficiency by aligning employees' interests with company performance.

Figure 72: SPC share stock option incentive scheme details

SPC stock option incentive scheme details

Announcement date	Aug 2014 (Approved in Dec 2014)
Details	To grant A-share stock options to directors, senior management and key business personnel upon the fulfillment of performance criteria
Timeframe	10 years, with a minimum interval of two years between each batch
Max stock options to be granted	10% of the total share capital (1,080,000 shares) and 10% of A-share capital (730,500 shares)
Exercise price setting	The higher of (1) Last closing price before the announcement of each batch, (2) Average closing price in the previous 30 trading days, and (3) Rmb4.2 (applicable for the first batch only).
Vesting schedule	40%/30%/30% of the stock options would become exercisable during the 3rd/4th/5th year from the grant date shall the performance criteria be fulfilled
Performance criteria	(1) ROE, (2) Attributable NP growth, (3) Revenue as a % of total operating income and (4) Economic Value Added set by SASAC

First batch

Announcement date	Jan 2015
Participants	214
Stock options granted	3,8760,000 (0.36% of total share capital)
Execution price	Rmb4.2/share

Source: Company, Deutsche Bank

Figure 73: Financial criteria to exercise the first batch of employee incentive stock options

Details	Exercisable Period	Assessed period	ROE	NP CAGR (Base year: 2013)	Attributable NP (exc non-recurring items)	Revenue as a % of tot operating income
Granting stock options	Jan 2015	FY13	≥ 6%	-	≥ 1.6bn	≥ 99%
Exercising up to 40% of stock options granted	Jan 2018-2019	FY15	≥ 9%	≥ 5%	≥ 1.82bn	≥ 99%
Exercising up to 30% of stock options granted	Jan 2019-2020	FY16	≥ 6%	≥ 5%	≥ 1.91bn	≥ 99%
Exercising up to 30% of stock options granted	Jan 2021-2022	FY17	≥ 6%	≥ 5%	≥ 2.01bn	≥ 99%

Source: Company, Deutsche Bank



Balance sheet

Strong cash balance could support higher dividend payout

With the company's strong cash balance and operating cash flow, we believe that SPC could potentially lift the dividend payout level in the future. However, we only forecast a DPS payout of 30% in our models. Hence, we expect the company to turn net cash of RMB1.4bn in 2016E and improve to a net cash position of RMB6bn by 2018E. If the company deploys the net cash of RMB6bn into dividends, that would be equal to RMB0.56/share.

Figure 74: Balance sheet (RMB mn)

Balance sheet	2013	2014	2015	2016E	2017E	2018E
Cash and cash equivalents	133	279	1,077	3,140	5,927	8,771
Inventories	9,039	5,931	4,178	4,592	5,455	6,318
Trade/bill receivables	2,837	1,997	1,480	1,683	1,977	2,247
Other current assets	2,477	1,304	1,409	1,409	1,409	1,409
Total Current Assets	14,486	9,510	8,144	10,823	14,768	18,744
PP&E	16,669	15,542	14,383	13,575	13,587	13,767
Lease prepayment and other assets	917	1,044	783	783	815	839
Investment properties	429	416	406	393	382	370
Construction in progress	457	543	723	1,323	1,241	941
Interests in associates/ JCE/ investments	2,994	2,936	3,311	3,878	4,564	5,227
Other long term assets	685	915	71	71	71	71
Total long term assets	22,151	21,395	19,677	20,023	20,660	21,214
Total Assets	36,637	30,906	27,821	30,846	35,427	39,958
Short-term borrowings	7,094	4,078	2,070	1,350	1,450	1,450
Trade/bill payable	2,749	3,523	2,124	2,560	3,041	3,522
Amounts due to related parties	6,664	3,042	1,574	1,574	1,574	1,574
Other payables	1,511	1,841	1,958	2,342	2,741	3,106
Total Current Liabilities	18,017	12,485	7,726	7,826	8,806	9,652
Long-term borrowings	628	1,633	0	350	800	1,250
Other long-term liabilities	0	16	0	0	0	0
Total long-term liabilities	628	1,649	0	350	800	1,250
Total Liabilities	18,645	14,134	7,726	8,176	9,606	10,902
Shareholder's Equity	17,732	16,500	19,797	22,333	25,436	28,620
Minority interests	259	271	297	337	386	436
Total equity	17,992	16,772	20,094	22,670	25,822	29,056
Total Liabilities and Equity	36,637	30,906	27,821	30,846	35,427	39,958

Source: Company data, Deutsche Bank estimates



Cash flow statement

Capex & net cash flow

We expect SPC to spend RMB1.7-1.75bn on capex across 2016E-2018E, mainly driven by investments in fuel upgrade, the alkylation unit, the EVA unit, and overhauls. Afterward, we expect maintenance capex of RMB1.1bn per annum. We have not yet factored any potential chemical project into our model. Therefore, we expect SPC to generate strong net cash flow of RMB2-2.8bn during 2016E-18E.

Figure 75: Cash flow statement (RMB mn)

Cash flow statement	2013	2014	2015	2016E	2017E	2018E
Profit before tax	2,445	-890	4,237	4,695	5,746	5,911
DD&A	2,552	2,287	2,045	1,894	1,773	1,782
Other non-cash items	-703	340	-295	-523	-731	-839
Finance cost	-764	-755	-421	-108	-144	-180
Income tax paid	-9	-10	-33	-1,032	-1,265	-1,312
Change in working capital	1,196	2,313	-810	202	-277	-286
Net operating cash flow	4,716	3,285	4,722	5,128	5,102	5,076
Capex	-1,323	-1,089	-695	-1,700	-1,750	-1,700
Acquisition of other investment	-60	-12	0	0	0	0
Disposal of PPE	599	24	17	26	26	26
Disposals of other investment	0	15	0	0	0	0
Other investing cash flow	155	151	239	65	188	356
Net cash used in investing activities	-629	-910	-439	-1,609	-1,535	-1,318
Net proceeds from borrowings	-4,118	-2,059	-3,685	-370	550	450
Dividend and interest	-379	-547	-11	-1,087	-1,330	-1,365
Net cash used in financing activities	-4,497	-2,606	-3,696	-1,457	-780	-915
Net changes	-410	-232	588	2,062	2,787	2,844
FX & other adjustment	0	0	0	0	0	0
Beginning cash balance	161	133	279	1,077	3,140	5,927
Ending cash balance	-249	-98	867	3,140	5,927	8,771

Source: Company data, Deutsche Bank estimates



Consensus

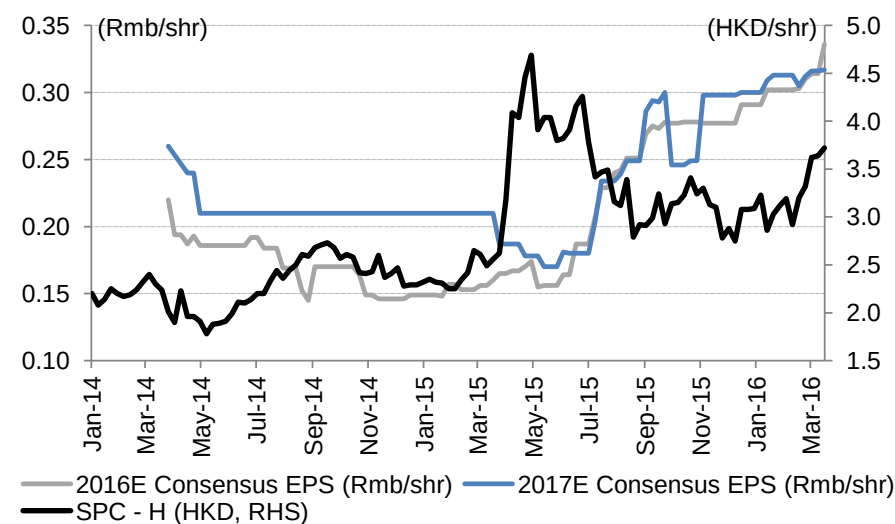
Our 2016E EPS is in line with consensus; conversely, our 2017E/18E estimates are 29%/16% above consensus. We believe our above-consensus 2017E/18E reflect our view on stronger tightening in the petrochemical product demand-supply balance.

Figure 76: DB estimates vs. Street

		2016E	2017E	2018E
DB estimates	Rmb/share	0.34	0.41	0.42
Bloomberg Consensus	Rmb/share	0.34	0.32	0.36
Variance		0%	29%	16%

Source: Bloomberg Finance LP, Deutsche Bank

Figure 77: Consensus estimates movement vs. SPC - H



Source: Bloomberg Finance LP, Deutsche Bank



Sensitivity

Earnings and target price to refining GRM and Chemical EBIT

Based on our calculation, every US\$0.5/bbl change in refining GRM will likely raise 2016E earnings by 7.5% and the target price by 7.6%. Meanwhile, for each US\$10/t increase in EBIT of Intermediate Petrochemicals, Resins & Plastics and Synthetic fiber, we expect 2016E earnings to increase by 4.1%, 2.7% and 0.5%, while the target price rises by 3.0%, 2.2% and 0.4% respectively.

Figure 78: EPS & TP sensitivity to refining GRM

Refining GRM				Price Target
EPS (RMB/share)	2016E	2017E	2018E	SPC - H
Base case (US\$/bbl)	6.39	6.98	7.16	HK\$/share
-US\$1/bbl	0.29	0.36	0.37	4.24
-US\$0.5/bbl	0.31	0.38	0.39	4.62
Base case	0.34	0.41	0.42	5.00
+US\$0.5/bbl	0.36	0.44	0.45	5.38
+US\$1/bbl	0.39	0.46	0.48	5.77
Every +/-US\$0.5/bbl	7.5%	6.4%	6.4%	7.6%

Source: Deutsche Bank estimates

Figure 79: EPS & TP sensitivity to Intermediate Petrochemicals EBIT

Intermediate Petrochemicals EBIT				Price Target
EPS (RMB/share)	2016E	2017E	2018E	SPC - H
Base case (US\$/t)	65.09	79.40	68.48	HK\$/share
-US\$20/t	0.31	0.38	0.39	4.7
-US\$10/t	0.32	0.40	0.41	4.85
Base case	0.34	0.41	0.42	5.00
+US\$10/t	0.35	0.42	0.44	5.15
+US\$20/t	0.36	0.44	0.45	5.31
Every +/-US\$10/t	4.1%	3.4%	3.4%	3.0%

Source: Deutsche Bank estimates

Figure 80: EPS & TP sensitivity to Resins & Plastics EBIT

Resins & Plastics EBIT				Price Target
EPS (RMB/share)	2016E	2017E	2018E	SPC - H
Base case (US\$/t)	141.17	151.10	152.36	HK\$/share
-US\$20/t	0.32	0.39	0.40	4.79
-US\$10/t	0.33	0.40	0.41	4.9
Base case	0.34	0.41	0.42	5.00
+US\$10/t	0.34	0.42	0.43	5.11
+US\$20/t	0.35	0.43	0.44	5.21
Every +/-US\$10/t	2.7%	2.3%	2.4%	2.2%

Source: Deutsche Bank estimates

Figure 81: EPS & TP sensitivity to synthetic fiber EBIT

Synthetic fiber EBIT				Price Target
EPS (RMB/share)	2016E	2017E	2018E	SPC - H
Base case (US\$/t)	(233.43)	(229.20)	(222.40)	HK\$/share
-US\$20/t	0.33	0.41	0.42	4.97
-US\$10/t	0.33	0.41	0.42	4.98
Base case	0.34	0.41	0.42	5.00
+US\$10/t	0.34	0.41	0.42	5.02
+US\$20/t	0.34	0.41	0.42	5.04
Every +/-US\$10/t	0.5%	0.4%	0.4%	0.4%

Source: Deutsche Bank estimates

Target price sensitivity to WACC/ Terminal growth

Our SPC target price is sensitive to our WACC and terminal growth assumptions. According to our calculation, every +1% and +0.5% change in WACC and terminal growth would result in a -12% and +4% change in target price, respectively.

Figure 82: Target price sensitivity to WACC/ terminal growth: SPC - H

PT sensitivity HK\$/share	WACC %					
	Base case					
		6.4%	7.4%	8.4%	9.4%	10.4%
Terminal growth (%) Base case	1.0%	6.23	5.35	4.69	4.19	3.79
	1.5%	6.57	5.56	4.84	4.29	3.86
	2.0%	6.98	5.81	5.00	4.40	3.95
	2.5%	7.49	6.11	5.20	4.54	4.04
	3.0%	8.16	6.49	5.43	4.69	4.14

Source: Deutsche Bank estimates



Valuation

SPC-H trades at 1.6x and 9.7x 2016E P/B and P/E, which are at the +1 SD of its historical range, reflecting the company's positive outlook. With strong earnings ahead, we derive our price target of HK\$5.0 based on DCF, which implies 2.0x 2016E P/B. We believe the 2.0x valuation is justified by the stronger than ever ROIC and stable GRM and chemical margins outlook. We believe the 2.0x P/B would capture the asset value at a time when profitability is much clearer compared to the historical period; the valuation is also justified via the Gordon Growth methodology.

Figure 83: Sinopec Shanghai Petrochemical Company valuation

Sinopec Shanghai Petrochem		Bloomberg Code		H-Share (338 HK), A-Share (600688 CH)								
Weighted Average Cost of Capital				Cost of Equity					Cost of Debt			
Net Debt/Total Capital		20.0%		Risk-free Rate of Return (b)		3.9%			Pre-tax Cost of Debt (a)		6.0%	
Market Equity/Total Capital		80.0%		Equity Risk Premium (c)		5.6%			Tax Rate		25.0%	
WACC (f)		8.4%		Company Beta (d)		0.98			After-tax Cost of Debt		4.5%	
Terminal growth		2.0%		Cost of Equity (e)		9.4%						
DCF	Units	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E
EBIT	HK\$mnn	4,172	5,015	5,072	4,821	4,821	4,821	4,821	4,821	4,821	4,821	4,821
Tax		(1,032)	(1,265)	(1,312)	(1,285)	(1,330)	(1,382)	(1,434)	(1,486)	(1,539)	(1,592)	(1,647)
Tax-Effectuated EBIT		3,140	3,750	3,760	3,536	3,491	3,439	3,387	3,335	3,282	3,228	3,174
+ Depreciation		1,894	1,773	1,782	1,808	1,774	1,711	1,654	1,603	1,557	1,517	1,480
- Capital Expenditure		(1,700)	(1,750)	(1,700)	(1,500)	(1,100)	(1,100)	(1,100)	(1,100)	(1,100)	(1,100)	(1,480)
- Working capital		202	(277)	(286)	15	(3)	(3)	(3)	(3)	(3)	(3)	(62)
Free Cash Flow		3,536	3,496	3,556	3,859	4,162	4,047	3,938	3,835	3,736	3,642	3,111
Number of Share	2016E	10,800										
Price target valuation				PT Implied Valuation								
NPV for CashFlow	RMBmn	26,080				2015	2016E	2017E	2018E			
Terminal value	RMBmn	20,481				P/E	14.6x	13.2x	10.8x	10.5x		
Net (debt) / cash	RMBmn	1,440				P/B	2.4x	2.1x	1.9x	1.7x		
Minority interest	RMBmn	(337)				ROIC	14.1%	15.4%	18.0%	17.5%		
Equity value	RMBmn	47,664				ROE	17.8%	16.9%	18.3%	16.6%		
FX: RMB:HKD		1.13										
Price target - H-Share (338 HK)		HK\$	5.0									
Price target - A-Share (600688 CH)		RMB	4.4									

(a) Deutsche Bank estimates

(b) Deutsche Bank estimates

(c) Deutsche Bank estimates

(d) Based on Bloomberg 5 years adjusted beta against Hang Seng Index

(e) CAPM: cost of equity = Risk-free Rate + (beta x equity risk premium).

Source: Bloomberg Finance LP, Deutsche Bank estimates

Cross check on valuation

Our DCF-derived target implied valuation is in line with Gordon Growth Model-derived target valuation multiples.

Figure 84: Valuation cross-check on Gordon Growth Model target multiple valuation

P/B	[ROE-g]/[COE-g]		
P/E	[ROE-g]/[ROEx(COE-g)]		
	2016E	2017E	2018E
ROE	16.9%	18.3%	16.6%
Terminal growth	2.0%	2.0%	2.0%
COE	9.4%	9.4%	9.4%
P/E	12.0x	12.1x	11.9x
P/B	2.0x	2.2x	2.0x

Source: Deutsche Bank estimate



Share price drivers

With SPC's production profile of offering a broad range of refining & chemical products, we have conducted an analysis of the company's share price sensitivity on products. According to our regression analysis, SPC's share price is highly correlated to chemical product spreads.

Ethylene is the highest-correlated product to SPC H among all the products SPC offers, with an adjusted R-square of 0.51/0.50 in the past 12/24 months. Conversely, the SPC A share price has the highest correlation to the MEG products spread. China GRM, on the other hand, has low correlation with only 0.06 R-square to SPC H & SPC A share prices. We believe this was due to the controlled/regulated refined product pricing environment in China.

Ethylene is the highest correlated product to SPC H among all products, with the 12M adjusted R-square of 0.51

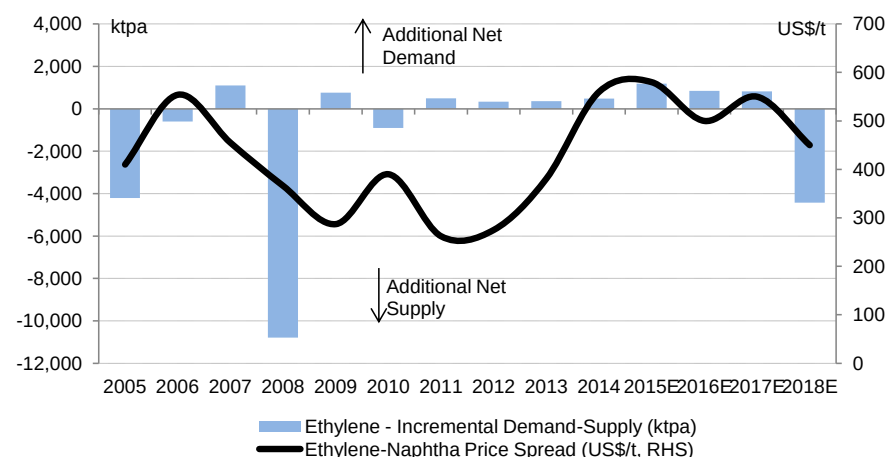
Historically, the company has been highly gauged with synthetic fibers. This signals that the market has turned more sensitive to margins in the olefin chain, as the outlook became more optimistic under the low crude oil price environment. Please see [Appendix - Share price vs. product prices / spreads](#) for a detailed analysis on each chemical product.

Figure 85: Regression analysis on price spreads vs. SPC - H Share price

Historical since 2010			Last 24 months		Since Apr 2015	
Top	Price Spread	Adj R2	Price Spread	Adj R2	Price Spread	Adj R2
1	Polyester Chips - naphtha	0.43	Ethylene - naphtha	0.50	Ethylene - naphtha	0.51
2	Polyester Staple Fiber - naphtha	0.38	LDPE - naphtha	0.46	Polyester POY - PTA & MEG	0.47
3	Polyester POY - naphtha	0.35	HDPE - naphtha	0.45	EO - Ethylene	0.41
4	PTA - naphtha	0.35	Polyester Chips - naphtha	0.37	Polyester Staple Fiber - PTA & MEG	0.37
5	MEG - naphtha	0.26	Polyester Staple Fiber - naphtha	0.31	PP - naphtha	0.35
	SPC - A	0.49	SPC - A	0.77	SPC - A	0.40
	China GRM	0.05	China GRM	0.36	China GRM	0.06
	Singapore Complex GRM	0.00	Singapore Complex GRM	0.06	Singapore Complex GRM	0.00
	Dubai Crude Oil	0.05	Dubai Crude Oil	0.27	Dubai Crude Oil	0.45

Source: Bloomberg Finance LP, Wind, Deutsche Bank Estimates

Figure 86: Ethylene addition supply/demand balance (2005-2018E)



Source: IHS Chemicals, ICIS, Bloomberg Finance LP, Deutsche Bank estimates

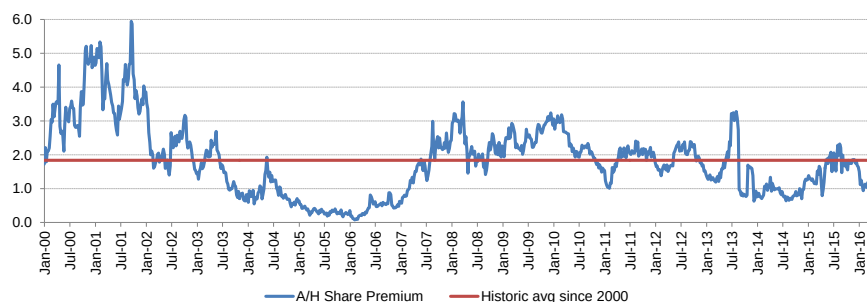


Valuation charts

SPC A-H share premium sustains

SPC's A-share has long traded at a premium to SPC's H-share, and the average premium of A-H was at the c.2x level. The A-H correlation has had an adjusted R-square of 0.49x since 2010. On the other hand, SPC's A-H performance has been more aligned since the Shanghai through-train started, and has recorded a 0.77x adjusted R-square since 2014.

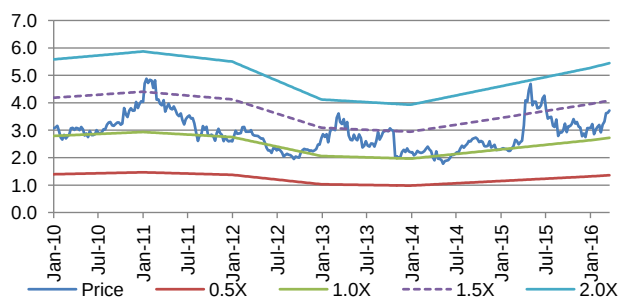
Figure 87: SPC A-share premium to SPC H-share



Source: Bloomberg Finance LP, Deutsche Bank estimates

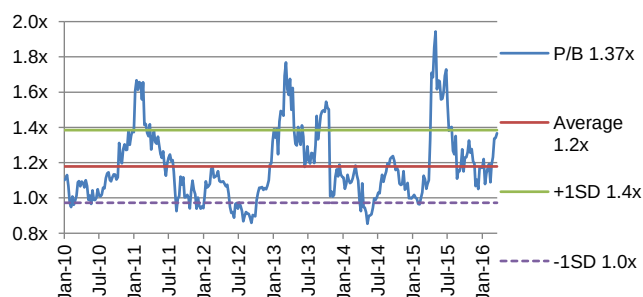
SPC-H-share: 12M forward valuation (P/B, P/E, EV/EBITDA)

Figure 88: 12-month forward P/B band



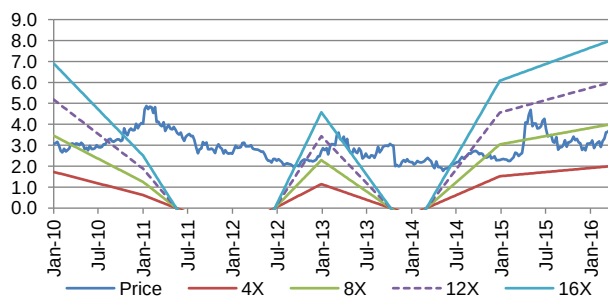
Source: Bloomberg Finance LP, Deutsche Bank estimates

Figure 89: 12-month forward P/B



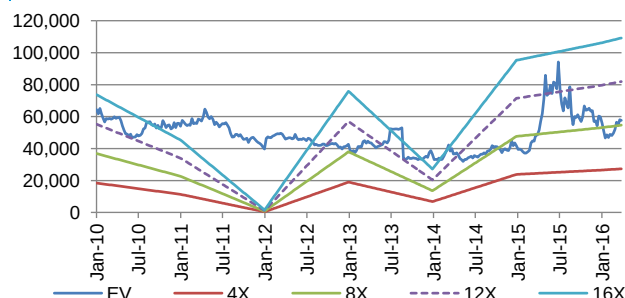
Source: Bloomberg Finance LP, Deutsche Bank estimates

Figure 90: 12-month forward P/E band



Source: Bloomberg Finance LP, Deutsche Bank estimates

Figure 91: 12-month forward EV/EBITDA



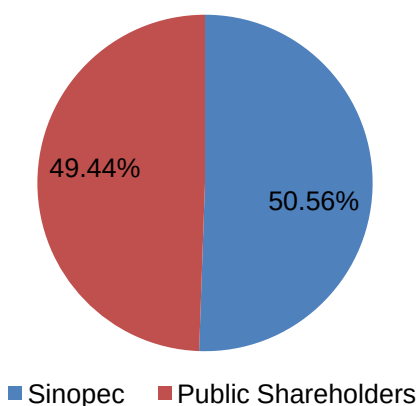
Source: Bloomberg Finance LP, Deutsche Bank estimates



Company profile

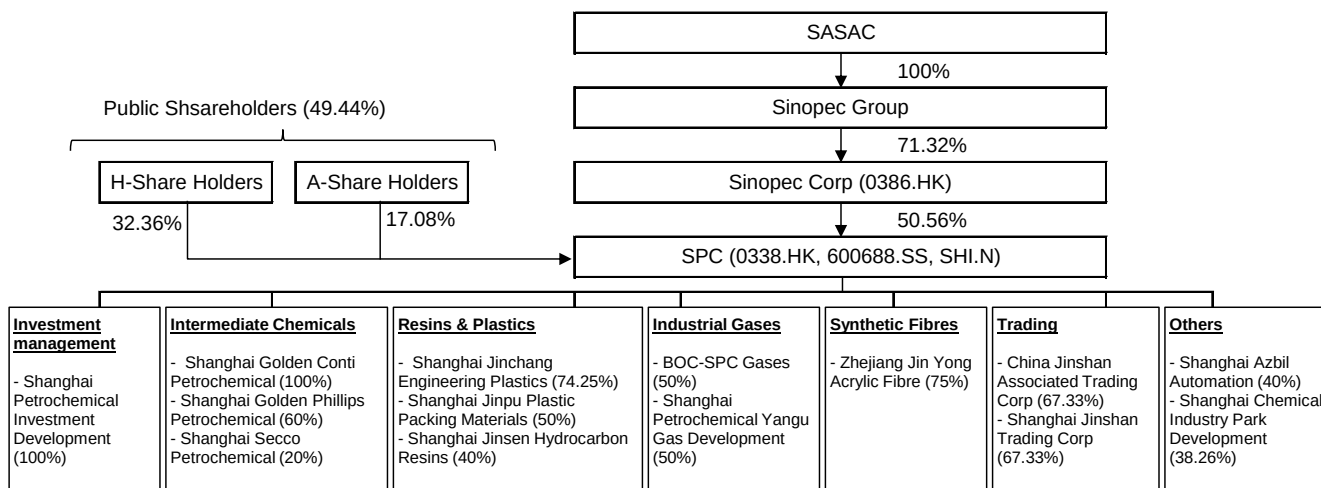
SPC is an integrated petrochemical companies in China. Located in Shanghai, the major business segments of SPC include the production of: (1) synthetic fibers, (2) resins and plastics, (3) intermediate petrochemicals, and (4) petroleum products. SPC distributes most of its products in the domestic market, and primarily derives revenues from customers in Eastern China. SPC grew out of the Shanghai Petrochemical Complex, which was founded in 1972. After the SOE restructuring, SPC was listed on the Shanghai Stock Exchange, the Hong Kong Stock Exchange and the New York Stock Exchange in 1993.

Figure 92: Shareholder structure



Source: Company data, Deutsche Bank

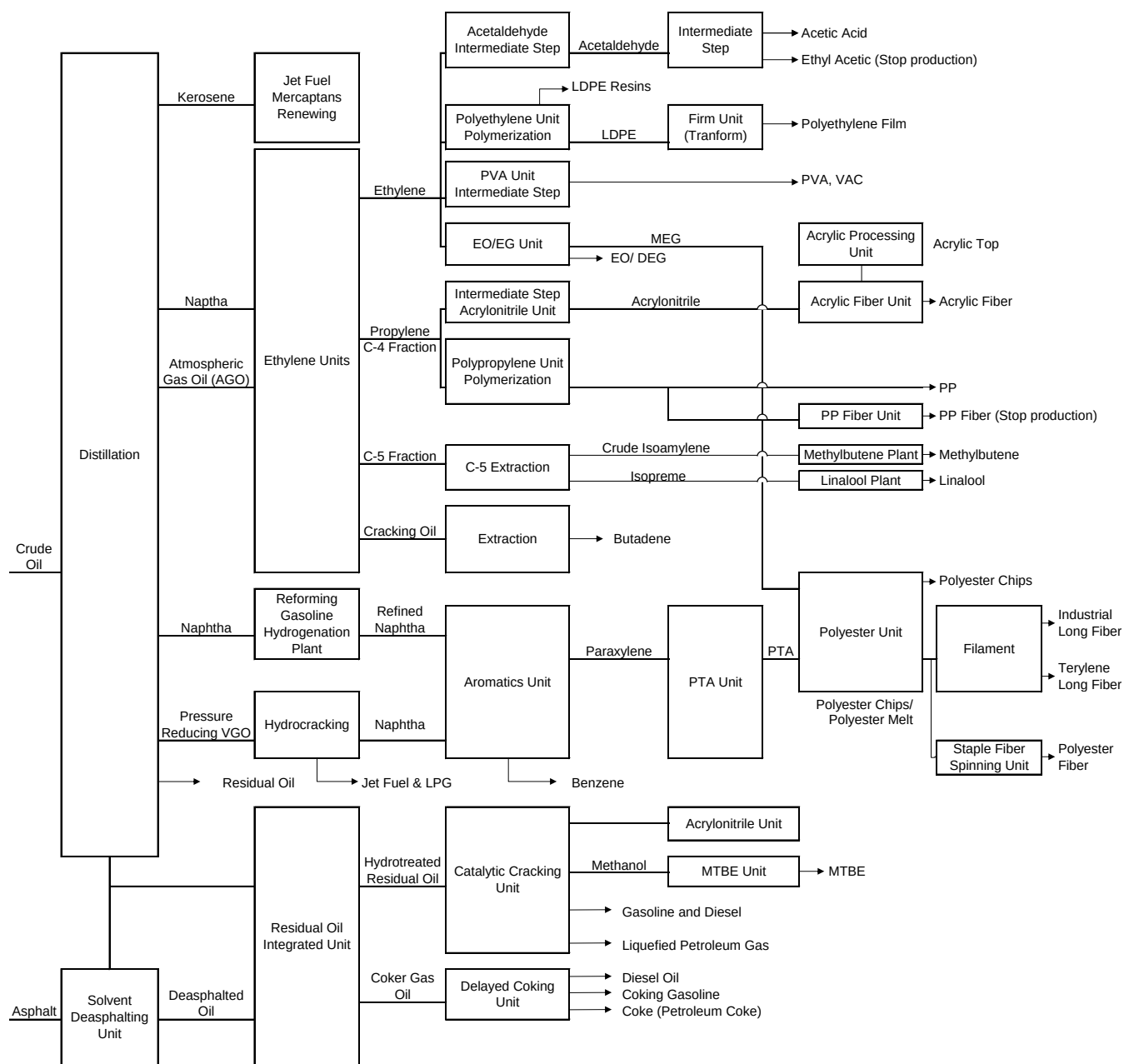
Figure 93: Corporate structure summary



Source: Company data, Deutsche Bank



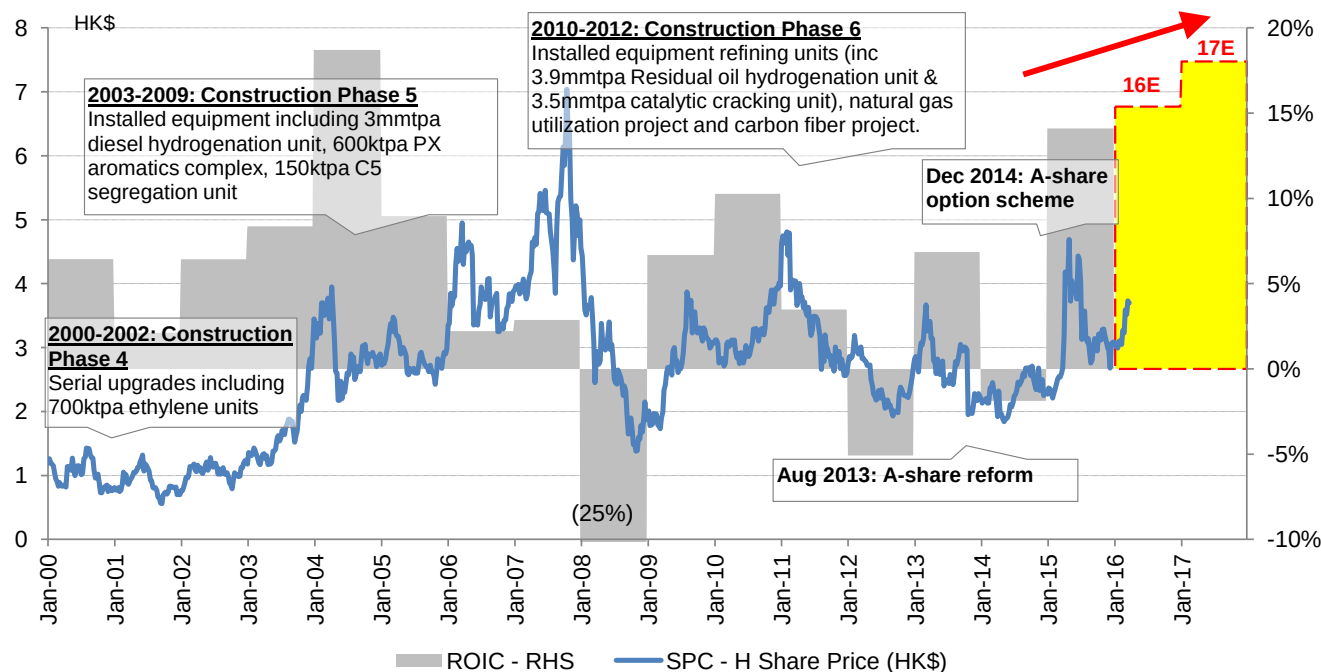
Figure 94: SPC product flow chart



Source: Company data, Deutsche Bank



Figure 95: SPC – H-share price, ROE movement and key events



Source: Company data, Deutsche Bank estimates

Figure 96: Management profile

Name	Position	Age	Profile
Zhiqing Wang	Chairman and President	53	Mr. Wang Zhiqing is the Chairman, President and Deputy Secretary of the Communist Party (CP) Committee of SPC. Mr. Wang is also the Vice Chairman of Secco. Previously, Mr. Wang was the Chief Engineer of Sinopec Luoyang Petrochemical (Luoyang) in 1999-2001, Vice President & Chief Engineer of Luoyang in 2000-01, President of Luoyang in 2001-06, Leader of the preparatory team of Sinopec Guangxi refinery in 2005-07, manager of Sinopec Jiujiang in 2006-08, President of Sinopec Jiujiang in 2008-10. Mr. Wang was appointed President and Deputy Secretary of the CP Committee of SPC in 2010, and Chairman in 2013.
Haijun Wu	Vice Chairman	53	Mr. Wu Haijun is the Vice Chairman of SPC. Mr. Wu is also the President and Secretary of the CP Committee of Secco. Previously, Mr. Wu was the Vice President of SPC in 1999-2006 and Director in 2004-06, manager and Secretary of the CP Committee of the Chemical Sales Branch Office of Sinopec Corp. in 2005-08, Director of the Chemical Business Department of Sinopec Corp in 2005-2010, President of Shanghai Secco in 2010-11. Mr. Wu was appointed Director and Vice Chairman of SPC in 2010.
Jinping Gao	Vice Chairman/ Vice President	49	Mr. Gao Jinping is the Vice Chairman, Secretary of the CP Committee and Vice President of SPC. Previously, Mr. Gao was the Deputy Secretary of the CP Committee of SPC in 2003-13, Chairman of the Labor Union of SPC in 2003-13, Secretary of the CP Discipline Supervisory Committee of SPC in 2006-13, Supervisor and Chairman of the Supervisory Committee of SPC in 2006-13. Mr. Gao was appointed Secretary of the CP Committee and Vice President of SPC in 2013. He was appointed Vice Chairman in 2014.
Guohua Ye	CFO	46	Mr. Ye Guohua has been CFO of SPC since 2009. Previously, Mr. Ye joined Shanghai Gaoqiao in 1991 and held various positions, including Deputy Chief and Chief of the Cost Accounting Section of the Finance Office, Director of the Finance Office of the Refinery Plant of Shanghai Gaoqiao, and Deputy Chief Accountant and Director of the Finance Department of Sinopec Shanghai Gaoqiao.
Qiang Jin	Vice President	49	Mr. Jin Qiang has served as Vice President of SPC since 2011. Before his current position, Mr. Jin was Deputy Chief Engineer of Sinopec Zhenhai Refining & Chemical Company in 2007-2011.
Xiaojun Guo	Vice President	45	Mr. Guo Xiaojun has served as the Vice President of SPC since 2013. Before his current position, Mr. Guo joined SPC in 1991, and acted as the Deputy Chief Engineer and Director of the Production Department in 2011-2013.
Jianbo Zhang	Joint Company Secretary	53	Mr. Zhang Jianbo was appointed joint company secretary of SPC in 2016. He is also the Deputy Secretary of the Communist Party Committee, and the Chairman of the Labor Union of SPC.
Clare Ng	Joint Company Secretary	55	Ms. Clare Ng was appointed joint company secretary of SPC in 2016.

Source: Company data, Deutsche Bank



Appendix – History of independent (teapot) refiners policy

1999-2001: Policy to scrap oversupply capacity

Back in 1999, the government announced the first clean-up of small-scale “teapot” refiners, wherein:

- (1) Refineries that were built without the approval of the State Council or excluded from the “1998 national crude oil allocation plan”.
- (2) Refineries included in the 1998 national crude oil allocation plan but non-compliant with the national emission or production quality standards would be shut down.
- (3) The oil quota for refineries included in the 1998 national crude oil allocation plan but possessing no refining units would be retracted.
- (4) Without State Council approval, it would be forbidden to establish new refining companies or to expand oil primary processing capacity; the current construction of any refineries without approval would be halted.
- (5) Ownership of the compliant teapot refiners would be restructured by CNPC & Sinopec via asset transfer, JV or M&A.
- (6) Going forward, allocation of all domestic and imported crude oils would be centralized.

As a result of the clean up, only 21 compliant Shandong teapot refiners were granted a Shengli grade crude oil supply quota of less than 2mmtpa in total. Other refiners had to either process crude oil under sub-contracts, operate as a JV with the state-owned oil companies, or process fuel oils of a lower grade (e.g. heavy oils).

2003-2013: Suppressed by majors

In May 2003, the Ministry of Railways announced it was to stop train services for any crude oil outside CNPC/ Sinopec’s refining production plans.

2013 – Current: turning supportive with supply side reform angle

In Oct 2013, the National Energy Administration (NEA) started drafting a new scheme which grants the quotas for importing crude oil and processing the imported oils to the teapot refiners who take capacity cuts.

At a State Council meeting held in July 2014, the Shandong Province Governor, Guo Shuqing, urged the granting of a total 20mmtpa oil-importing quota to Shandong teapot refiners. Later, at end-2014, the Shandong Province issued a Proposal to optimize their teapot refining industry, which advocated supporting key refiners to apply for the license to import oil and process the imported oils. By 2017, the Province targets to eliminate/restructure over 20 substandard refiners, cut/upgrade inefficient crude oil processing capacity by 12mmtpa and limit the teapot refining capacity within 100mmtpa.

In Feb 2015, the NDRC announced new measures on granting the imported oil processing quota to teapot refiners, in an effort to optimize the refining industry structure, scrap excessive inefficient capacity and encourage refining unit upgrade. In particular, the NDRC would follow the rules below to designate the quota in processing imported oil:



Figure 97: Rules for allocating imported oil processing quota

Particulars	Quota granted (Multiple of scrapped/ reformed capacity)
1) To scrap oil distillation units with capacity of ≤2mn ton/year	1.0x
2) To scrap oil distillation units with capacity of >2mn ton/year	1.2x
3) To scrap refining units compliant with the 1999/2000 clean-up	2.0x
4) To scrap any inefficient refining units across provinces, autonomous regions or municipal cities	Additional 20% on Rule 1-3
5) To fulfill fuel upgrades (China-V) by 2015 (except BTH, YRD & PRD region)	Additional 20% on Rule 1-4
Particulars	Quota granted
1) To build LNG, CNG storage capacity linking to the urban underground gas pipeline network, with ≥25mcm storage capacity in any single city (exc storages connected to LNG manufactories/ terminals)	1mn ton/year per 50mcm storage added
2) To build underground gas storage	1mn ton/year per 200mcm storage added
3) To co-build gas storage as a JV	Allocated on pro-rata basis

Source: NDRC, Deutsche Bank

Refiners who take the imported oil processing quota are prohibited from building any new refining units without State Council approval, and selling/ rebuilding the scrapped refining units in other provinces.

In Jul 2015, the NDRC announced it was to grant the first imported oil processing quota to teapot refiner, Shandong Dongming. One month later, MOFCOM further announced it was to grant the oil importing license to Shandong Dongming, marking the first teapot refiner to possess both the rights to import oil and to process the imported oil.

In Nov 2015, MOFCOM further announced it was to allow the eligible teapot refineries to apply for the refined oil exporting quota. To qualify, the refinery would need to (1) possess imported oil processing quota, (2) be qualified for and possess crude oil processing quota, and (3) guarantee supply to the domestic market.

In late Feb, 16 local refineries (six of whom possessed both the license to import oil and process the imported oil) have founded the first petroleum purchasing association in China to centralize their purchase of imported crude oils.

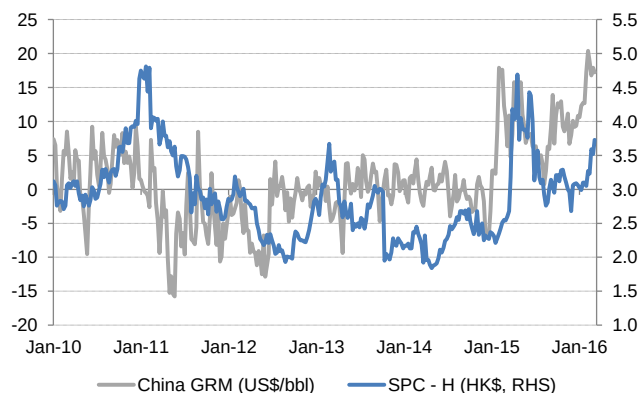
As of today, 12 independent refiners have obtained the quota to process imported crude oil of 51.39mn ton/year in total. Among them, 10 of the refiners also have the license to import crude oil of an aggregate of 42.39mn ton. Meanwhile, another 11 independent refiners are pending approval for processing imported oil of 38.11mn ton/year in total. Among the total 23 teapot refiners who have applied for imported oil processing, 18 are located in Shandong.



Appendix - Share price vs. product prices/spreads

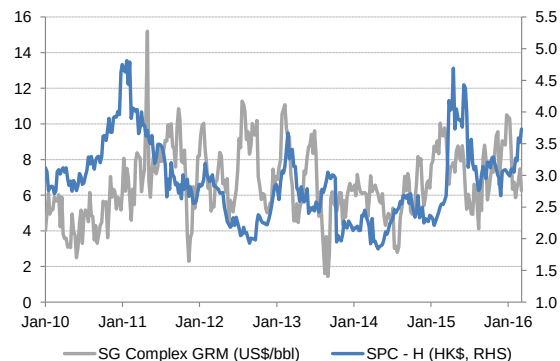
Vs. refining margins / crude oil price / A-H discount

Figure 98: China GRM vs. SPC - H



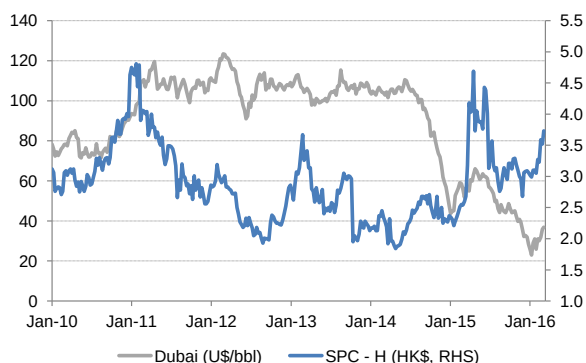
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 99: Singapore Complex GRM vs. SPC - H



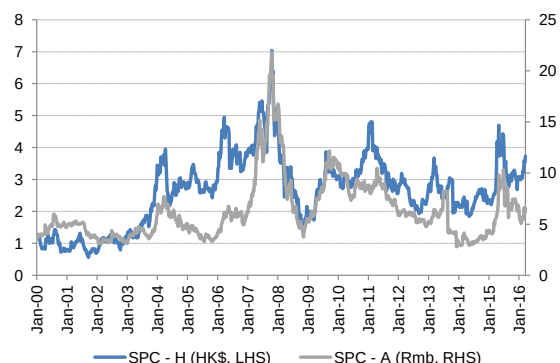
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 100: Dubai vs. SPC - H



Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 101: SPC - H vs. SPC - A

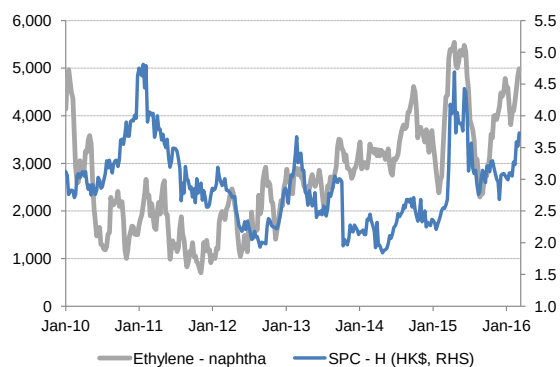


Source: Bloomberg Finance LP, Wind, Deutsche Bank



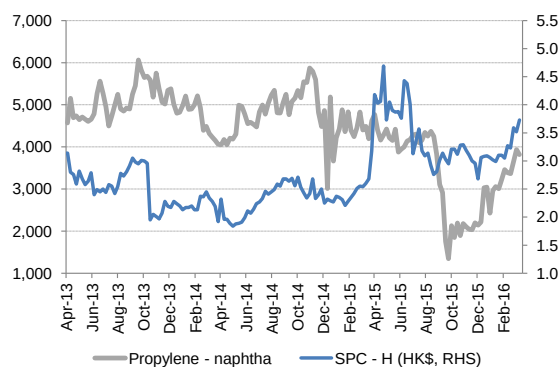
Vs. petrochemical intermediate product spreads

Figure 102: Price spread: Ethylene - naphtha



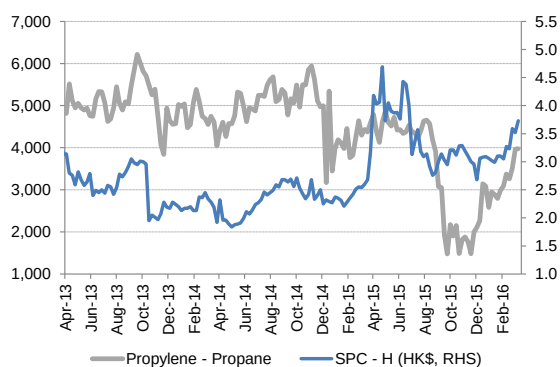
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 103: Price spread: Propylene - naphtha



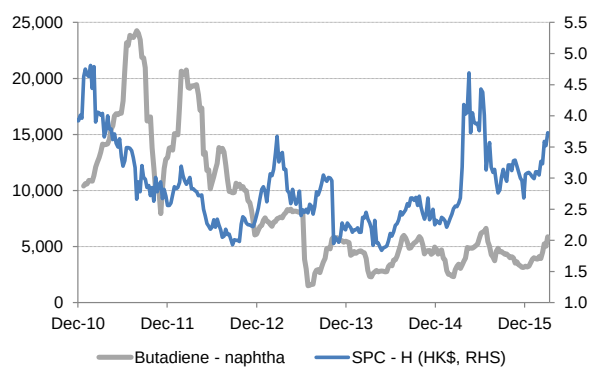
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 104: Price spread: Propylene - Propane



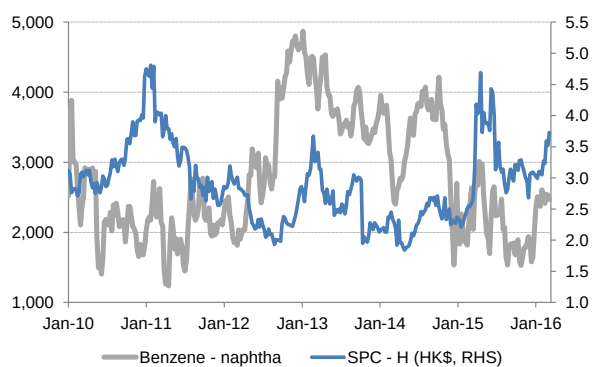
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 105: Price spread: Butadiene - naphtha



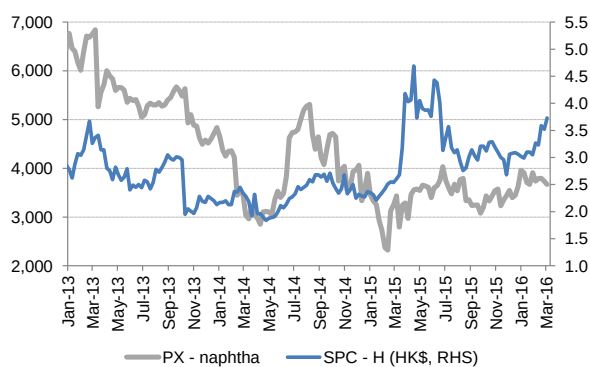
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 106: Price spread: Benzene - naphtha



Source: Bloomberg Finance LP, Wind, Deutsche Bank

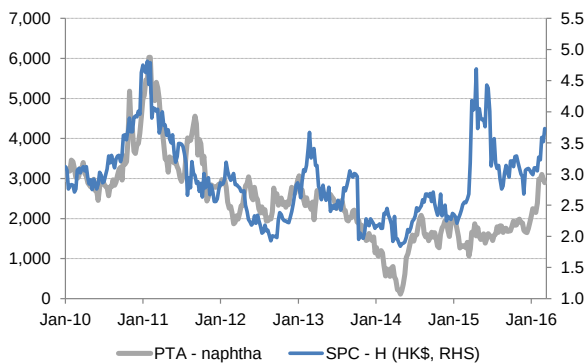
Figure 107: Price spread: PX - naphtha



Source: Bloomberg Finance LP, Wind, Deutsche Bank

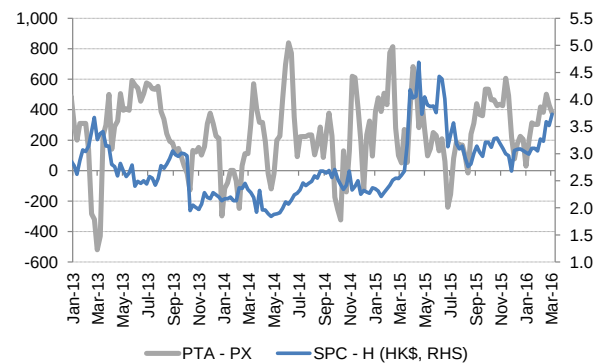


Figure 108: Price spread: PTA - naphtha



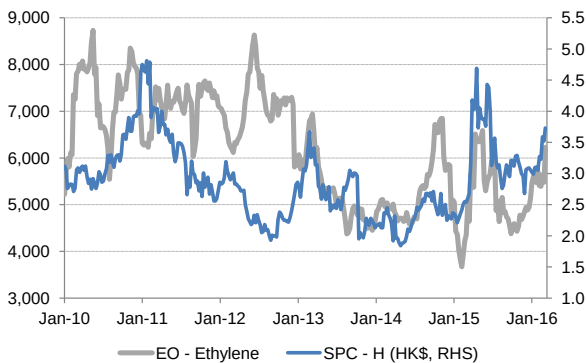
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 109: Price spread: PTA - PX



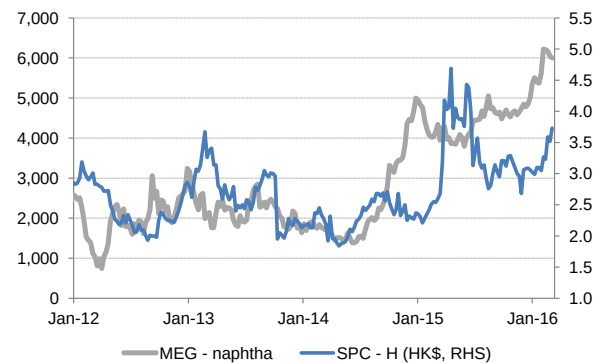
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 110: Price spread: EO - Ethylene



Source: Bloomberg Finance LP, Wind, Deutsche Bank

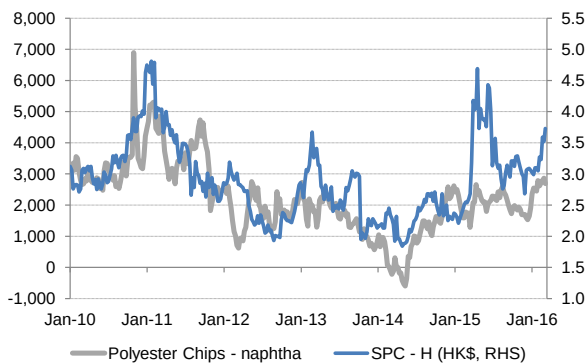
Figure 111: Price spread: MEG - naphtha



Source: Bloomberg Finance LP, Wind, Deutsche Bank

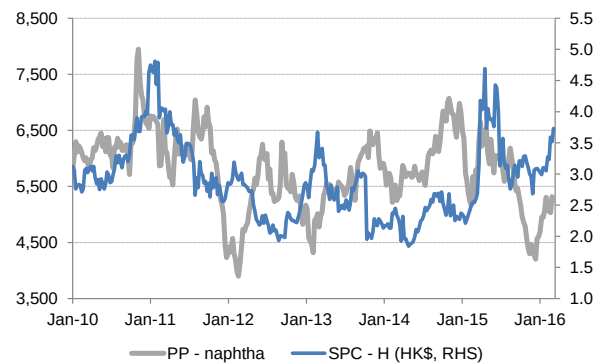
Vs. resins and plastics spreads

Figure 112: Price spread: Polyester Chips - naphtha



Source: Bloomberg Finance LP, Wind, Deutsche Bank

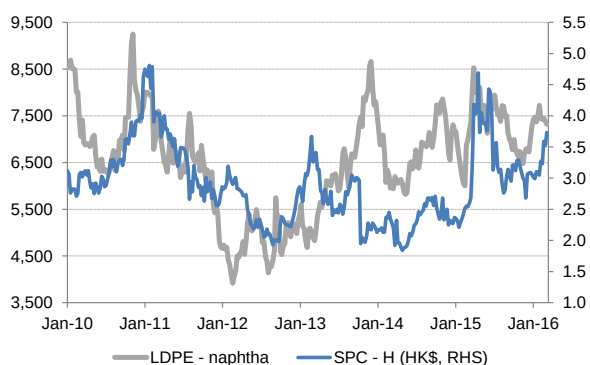
Figure 113: Price spread: PP - naphtha



Source: Bloomberg Finance LP, Wind, Deutsche Bank

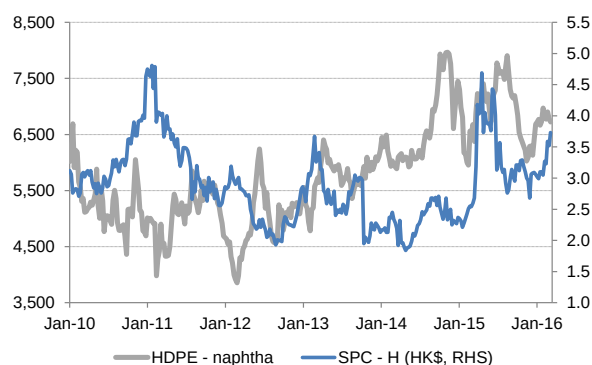


Figure 114: Price spread: LDPE - naphtha



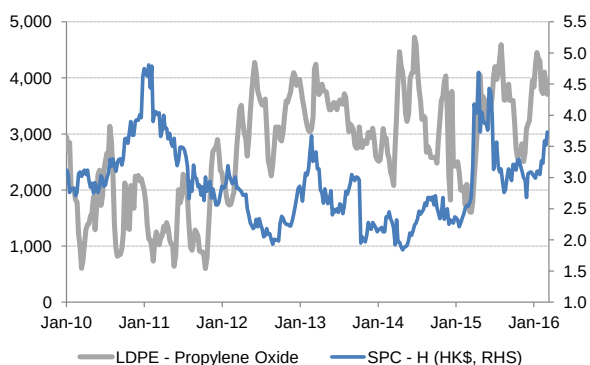
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 115: Price spread: HDPE - naphtha



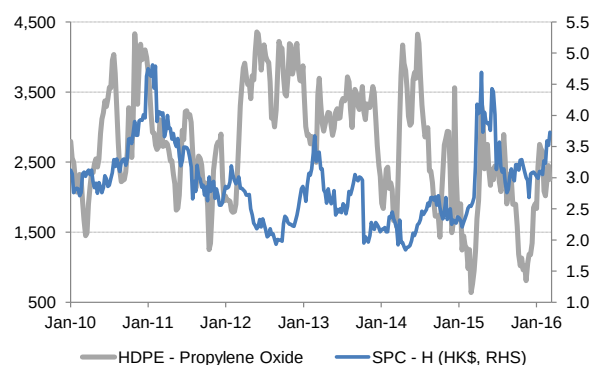
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 116: Price spread: LDPE - Propylene Oxide



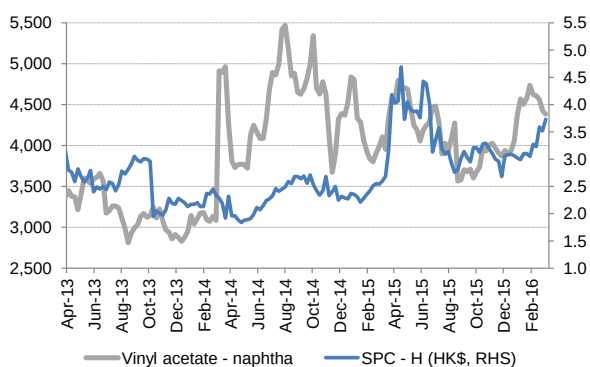
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 117: Price spread: HDPE - Propylene Oxide



Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 118: Price spread: vinyl acetate - naphtha

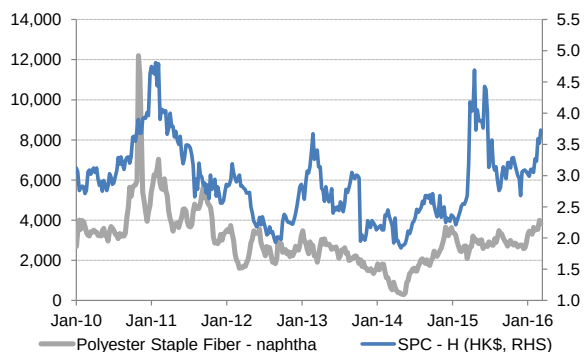


Source: Bloomberg Finance LP, Wind, Deutsche Bank



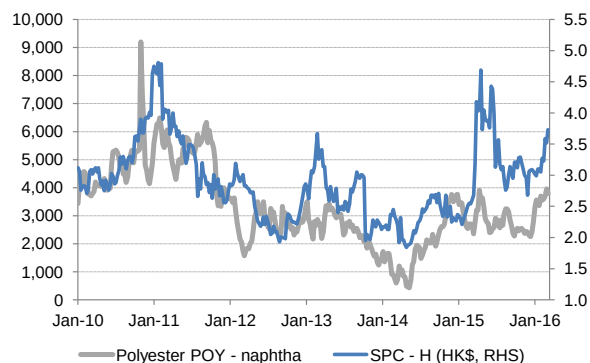
Vs. synthetic fibers spreads

Figure 119: Price spread: polyester staple fiber - naphtha



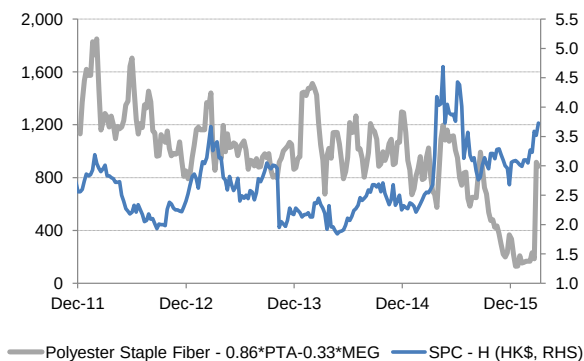
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 120: Price spread: polyester POY - naphtha



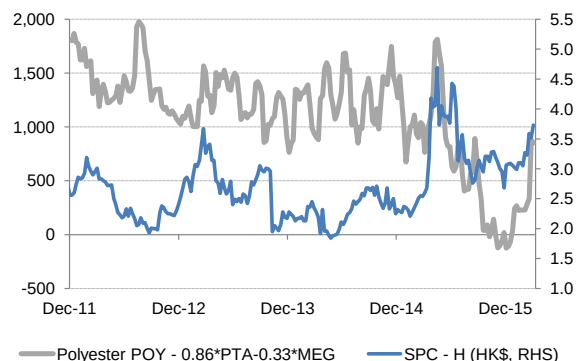
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 121: Price spread: polyester staple fiber -PTA/MEG



Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 122: Price spread: polyester POY - PTA/MEG



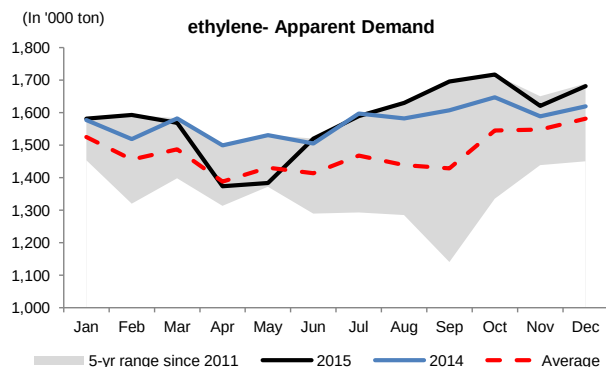
Source: Bloomberg Finance LP, Wind, Deutsche Bank



Appendix – China apparent demand

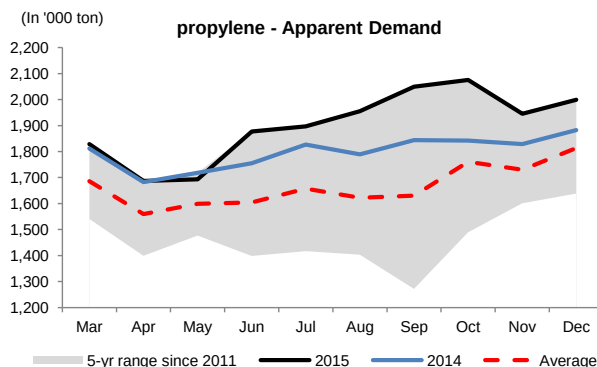
Petrochemical intermediate product

Figure 123: China apparent demand: ethylene



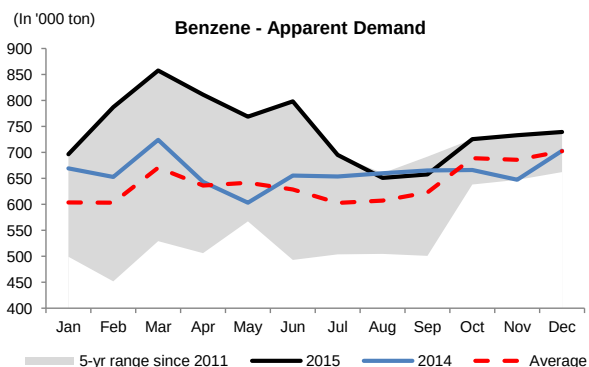
Source: Bloomberg Finance LP, CEIC, Wind, Deutsche Bank

Figure 124: China apparent demand: propylene



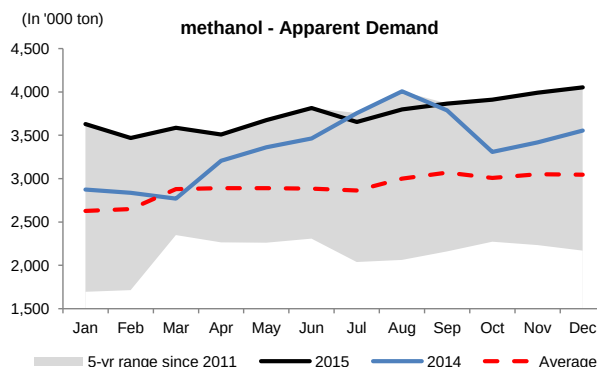
Source: Bloomberg Finance LP, CEIC, Wind, Deutsche Bank

Figure 125: China apparent demand: Benzene



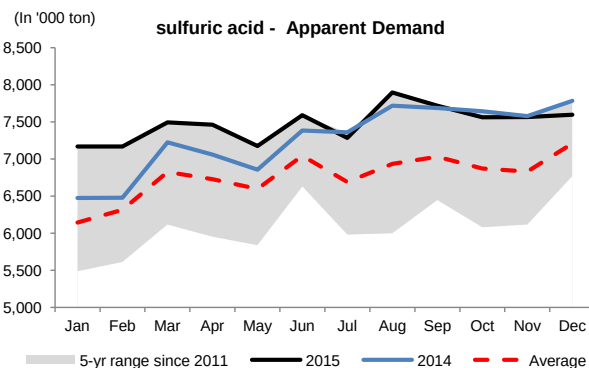
Source: Bloomberg Finance LP, CEIC, Wind, Deutsche Bank

Figure 126: China apparent demand: methanol



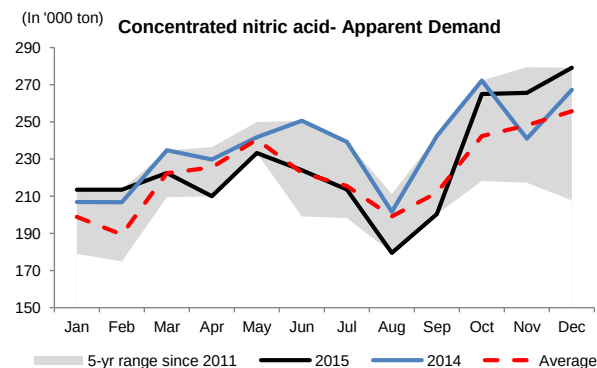
Source: Bloomberg Finance LP, CEIC, Wind, Deutsche Bank

Figure 127: China apparent demand: sulfuric acid



Source: Bloomberg Finance LP, Wind, Deutsche Bank

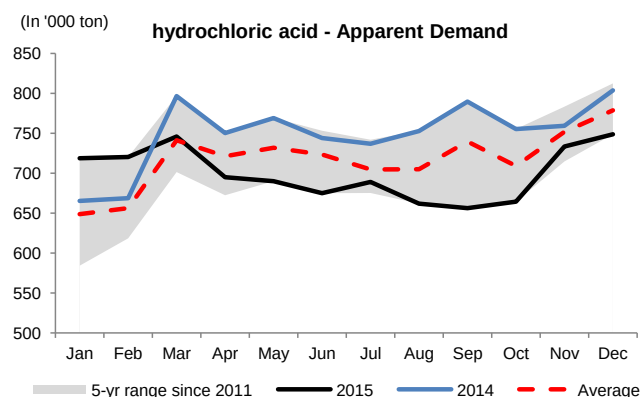
Figure 128: China apparent demand: conc. nitric acid



Source: Bloomberg Finance LP, Wind, Deutsche Bank

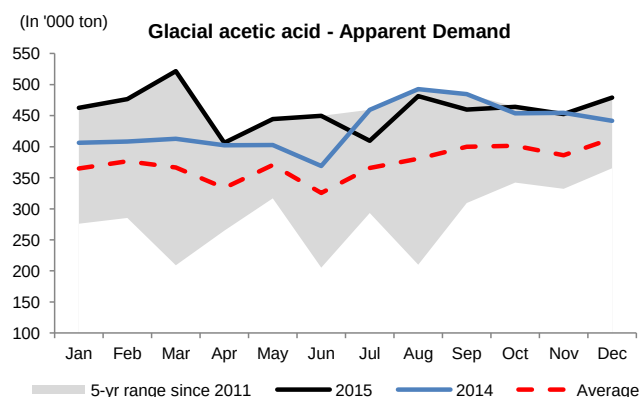


Figure 129: China apparent demand: hydrochloric acid



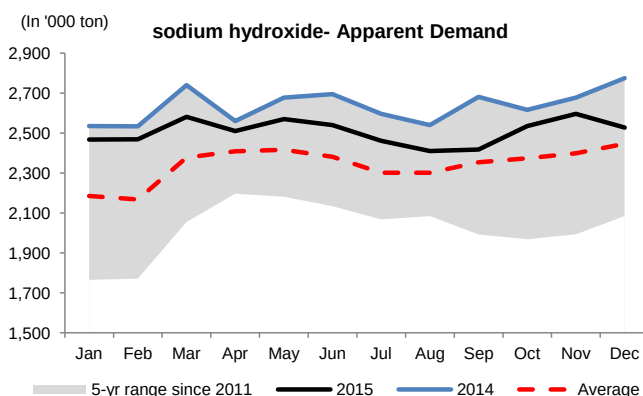
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 130: China apparent demand: glacial acetic acid



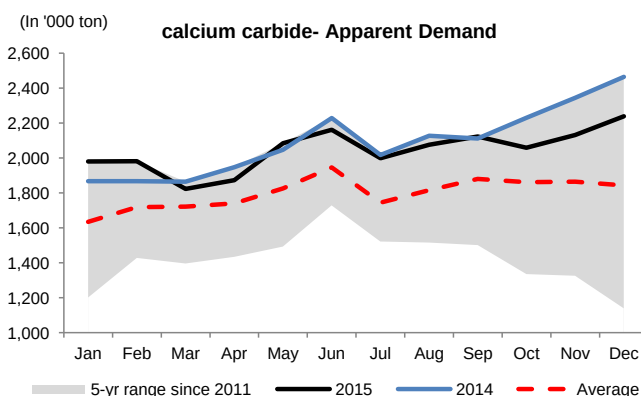
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 131: China apparent demand: sodium hydroxide



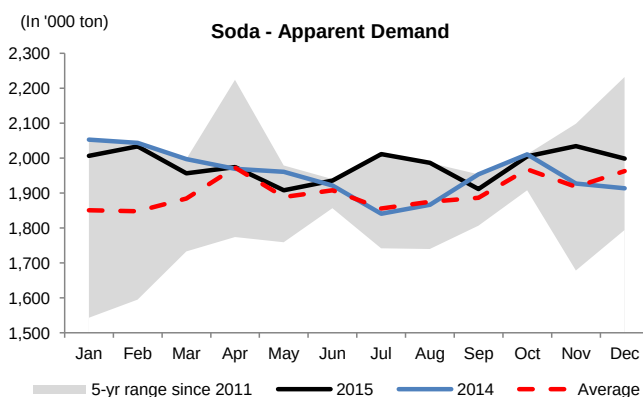
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 132: China apparent demand: calcium carbide



Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 133: China apparent demand: soda

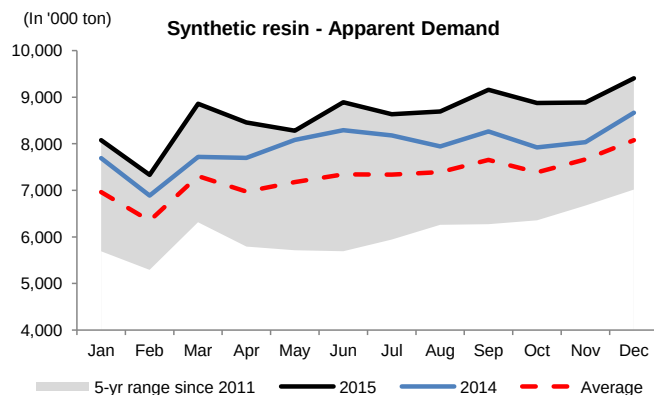


Source: Bloomberg Finance LP, Wind, Deutsche Bank



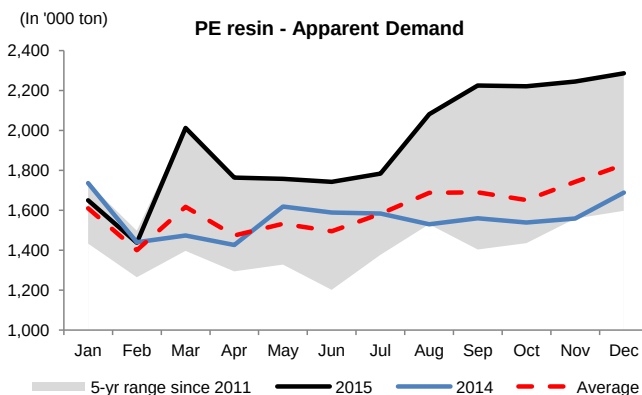
Resins and plastics

Figure 134: China apparent demand: synthetic resin



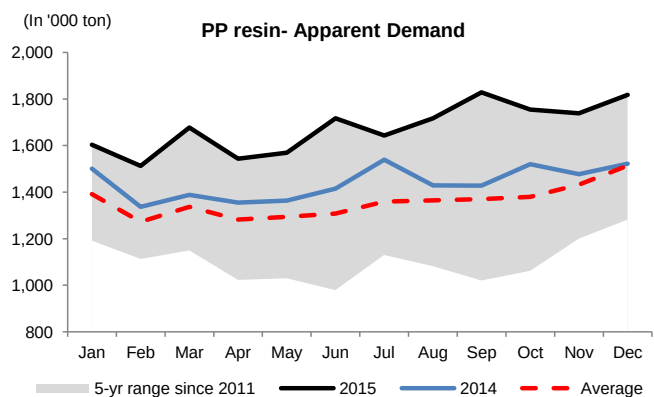
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 135: China apparent demand: PE resin



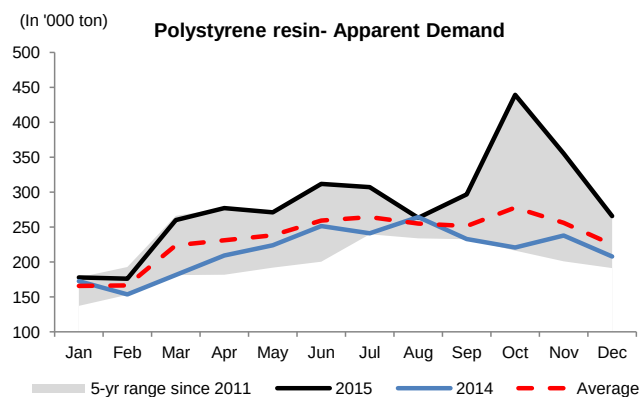
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 136: China apparent demand: PP resin



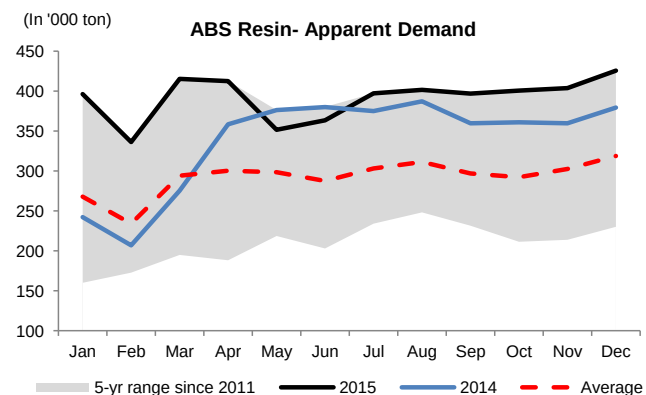
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 137: China apparent demand: polystyrene resin



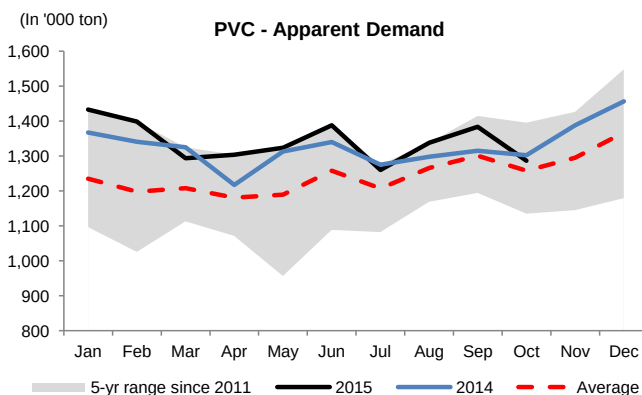
Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 138: China apparent demand: ABS Resin



Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 139: China apparent demand: PVC

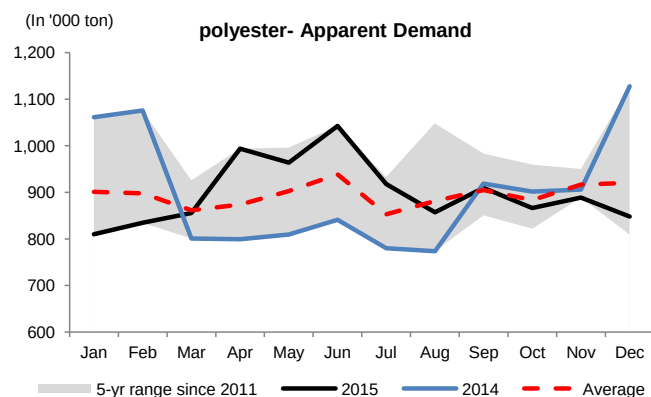


Source: Bloomberg Finance LP, Wind, Deutsche Bank



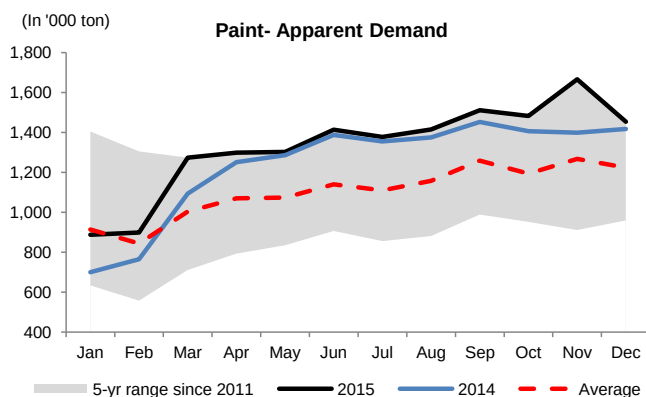
Synthetic fiber polymers and paints

Figure 140: China apparent demand: polyester



Source: Bloomberg Finance LP, Wind, Deutsche Bank

Figure 141: China apparent demand: paint



Source: Bloomberg Finance LP, Wind, Deutsche Bank



Appendix 1

Important Disclosures

Additional information available upon request

Disclosure checklist			
Company	Ticker	Recent price*	Disclosure
SPC - H	0338.HK	3.89 (HKD) 30 Mar 16	1,6,7,9

*Prices are current as of the end of the previous trading session unless otherwise indicated and are sourced from local exchanges via Reuters, Bloomberg and other vendors. Other information is sourced from Deutsche Bank, subject companies, and other sources. For disclosures pertaining to recommendations or estimates made on securities other than the primary subject of this research, please see the most recently published company report or visit our global disclosure look-up page on our website at <http://gm.db.com/ger/disclosure/DisclosureDirectory.eqsr>.

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Historical recommendations and target price: SPC - H (0338.HK) (as of 3/30/2016)



Previous Recommendations

Strong Buy
Buy
Market Perform
Underperform
Not Rated
Suspended Rating

Current Recommendations

Buy
Hold
Sell
Not Rated
Suspended Rating

*New Recommendation Structure
as of September 9, 2002

Equity rating key

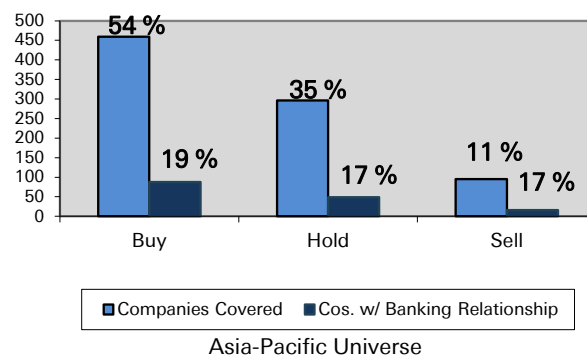
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Sell: Based on a current 12-month view of total share-holder return, we recommend that investors sell the stock

Hold: We take a neutral view on the stock 12-months out and, based on this time horizon, do not recommend either a Buy or Sell.

Newly issued research recommendations and target prices supersede previously published research.

Equity rating dispersion and banking relationships



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