

ASIA CHEMICALS

Down, but not out

■ Brighter outlook after a difficult first half

Chemical margins have weakened sequentially from their peak in 1Q18, hurt by destocking on US-China trade war concerns, a depreciating RMB, environmental inspections impacting end-users of chemicals, rising oil prices and increasing PE supplies from the US and India. We believe margins have bottomed out, and can maintain their presently still-high levels due to restrained chemical production in China, a high level of cracker maintenance in Asia during 2H18 and steady demand in China.

■ Silver lining to the trade war and Iran sanctions

We do not expect the US-China trade war to significantly damage chemical margins, as: 1) the share of direct and indirect chemicals exports from China to the US is only 8% of total China production; 2) US PE exports to China are likely to be diverted to Europe, easing the pressure on Asian chemical margins; and 3) existing plans to add ethane crackers in China are likely to be cancelled. US sanctions against Iran are also likely to lead to lower Iran chemical exports, and similarly result in significant chemical project cancellations in Iran.

■ Korean chemicals oversold; we prefer NYP in the Formosa group

Taking into account recent results and changes in our margin forecasts, we adjust our 2018-20 net profit estimates for sector stocks by -7% to +8% and TPs by -7% to +6%. We expect chemical margins to remain at overall mid-to-peak cycle levels and recommend BUYs on Lotte Chem and LG Chem, who are trading below mid-cycle levels. In contrast, we believe earnings in the Formosa group peaked in 1H18 due to a poor refining margin outlook; NYP is our only BUY in the group due to its exposure to DRAM.

BNPP recommendations

Company	BBG code	Share price	Rating		Target price			
			Current	Previous	Current	Previous	%change	Up/downside
Lotte Chemical	011170 KS	332,500.00	BUY	Buy	465,000.00	500,000.00	-7.0%	+39.8%
LG Chem	051910 KS	321,500.00	BUY	Buy	395,000.00	400,000.00	-1.3%	+22.9%
Nanya Plastics	1303 TT	84.10	BUY	Buy	96.00	95.00	+1.1%	+14.1%
Formosa Plastics	1301 TT	107.00	HOLD	Hold	112.00	110.00	+1.8%	+4.7%
Formosa Chem & Fibre	1326 TT	112.50	HOLD	Hold	116.00	115.00	+0.9%	+3.1%
Chandra Asri Petrochemical	TPIA IJ	5,075.00	HOLD	Hold	4,750.00	4,499.90	+5.6%	-6.4%
Formosa Petro	6505 TT	118.50	REDUCE	Reduce	100.00	100.00	+0.0%	-15.6%

Note: Priced at close of business 17/7/2018. Share prices and TPs are in listing currency.
Sources: FactSet; BNP Paribas estimates



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Our research is available on Thomson Reuters, Bloomberg, S&P Global, FactSet, RSRCHXchange and ONEaccess.



BNP PARIBAS

The bank for a changing world

Investment thesis

Chemical margins have weakened sequentially from their peak in 1Q18, hurt by destocking on US-China trade war concerns, a depreciating RMB, environmental inspections impacting end-users of chemicals, rising oil prices and increasing PE supplies from the US and India.

Despite these headwinds, overall chemical margins remain at healthy levels, boosted by restrained chemical production in China and a high level of cracker maintenance in Asia during 2H18. The US-China trade war and imposition of Iran sanctions could also have a long-term positive effect by reducing capacity expansions.

We adjust our 2018-20 net profit estimates for sector stocks by -7% to +8% and TPs by -7% to +6%. We expect chemical margins to remain at overall mid-to-peak cycle levels and recommend BUYs on Lotte Chem and LG Chem, who are trading below mid-cycle levels.

Catalyst

Potential positive catalysts include: 1) ethylene and PE margins sustaining at present levels in 2H18; 2) oil prices remaining range-bound at present levels; and 3) falling Iran chemical exports due to the impact of US sanctions.

Risk to our call

The key downside risk to our view of resilient chemical earnings is if oil prices were to spike or if China demand were to worsen significantly.

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Event calendar

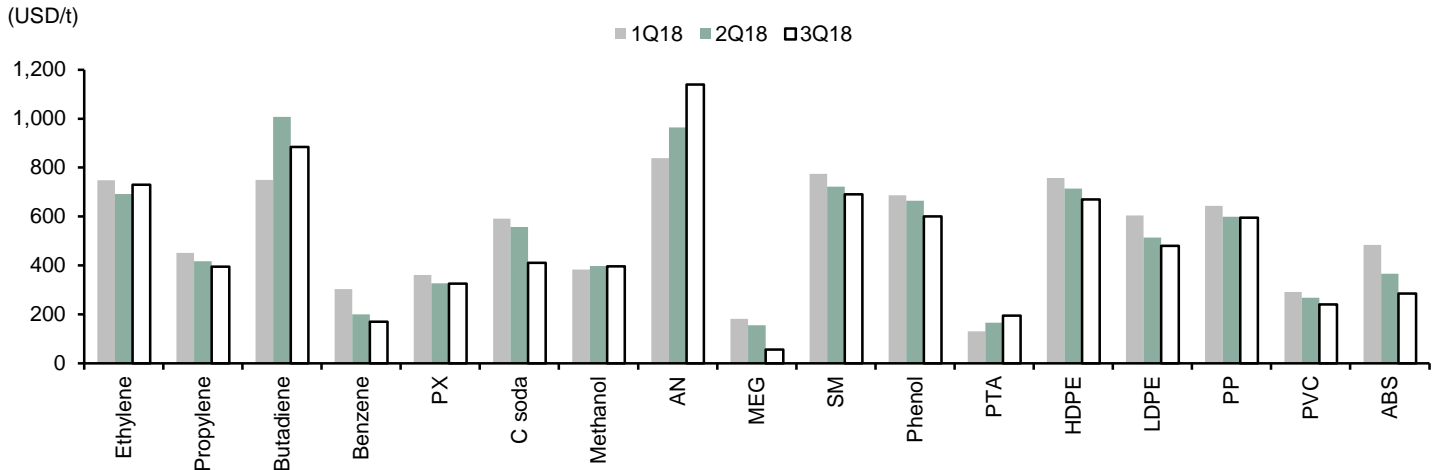
Date	Event
24 Jul	LGC 2Q18 results
31 Jul	Lotte Chemical 2Q18 results

Down, but not out

Sequentially weakening margin trend

Chemical margins have been broadly falling since the beginning of the year, most notably for LDPE, ABS, benzene, caustic soda, SM and MEG. In contrast, ethylene has remained stable, while AN and PTA have risen.

Exhibit 1: Chemical margin trend (1Q-3Q18)

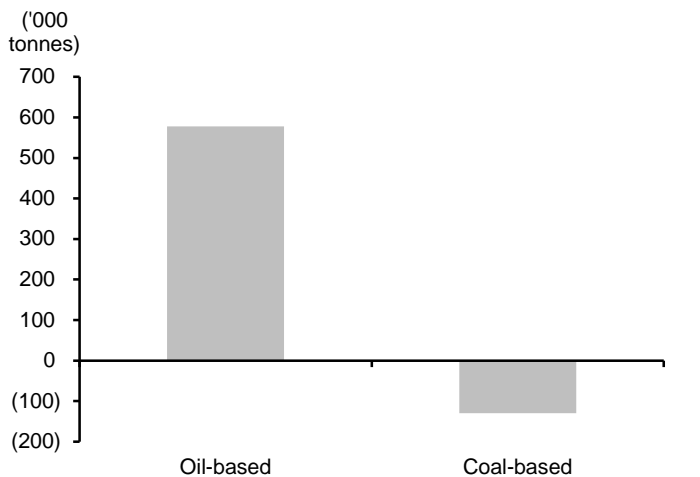


Source: Datastream

We attribute the broad decline in product margins to:

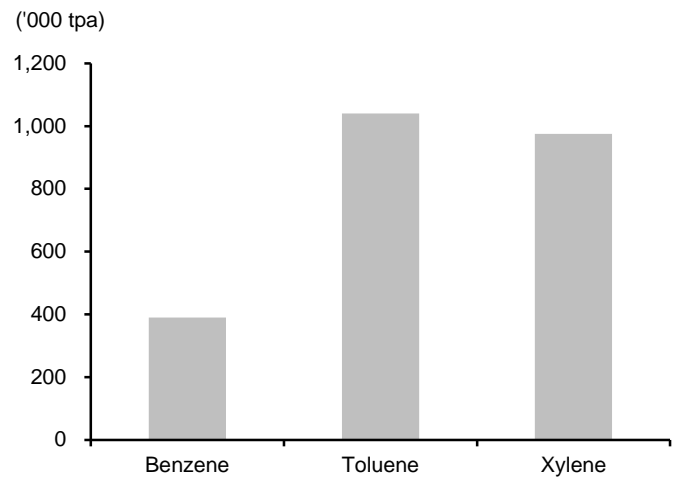
- Concerns over the US-China trade war, which has resulted in Chinese plastic converters reducing PE resin purchases as they prefer to reduce their finished products inventory until the situation becomes clearer.
- The RMB depreciating against the USD by 6% since end-1Q18, deterring Chinese buyers from importing chemicals as domestic products become cheaper.
- Stringent environmental monitoring, which has reduced chemical demand as many small-sized factories have had to shut down or reduce operating rates, affecting an estimated 20-30% of small converters nationwide.
- Chinese independent refineries starting up new reforming capacity of c150kb/d in 2018, which we estimate will result in significant new aromatic production, thus hurting benzene and PX margins.

Exhibit 2: China benzene production growth (1H18 vs 1H17)



Source: IHS

Exhibit 3: China aromatic capacity additions (2018)



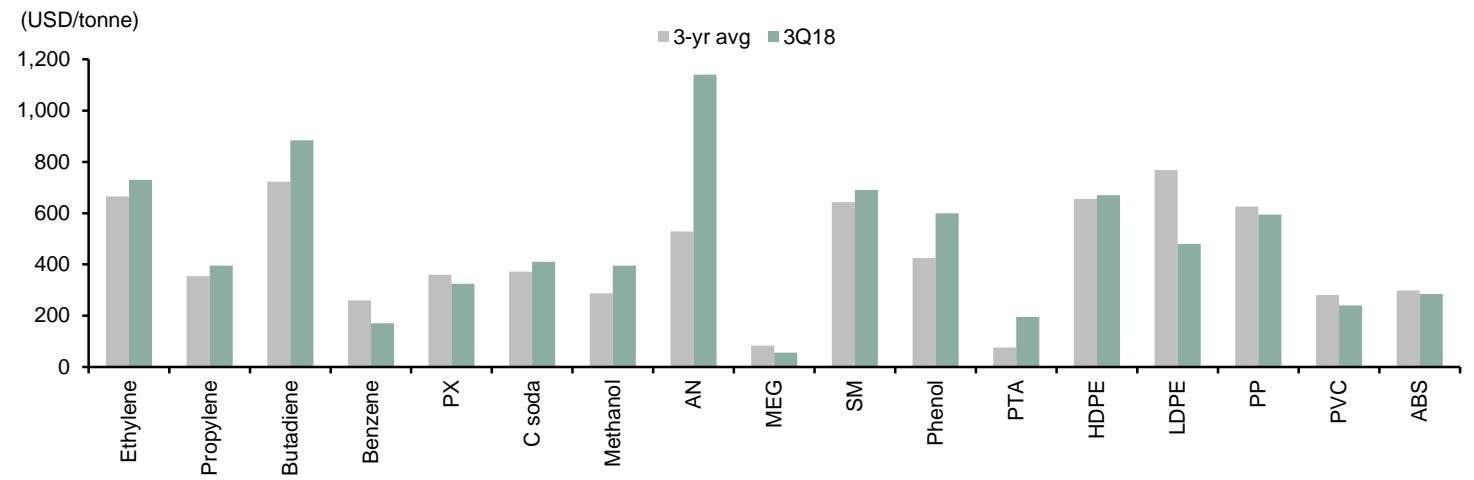
Source: IHS

- Increasing supplies of PE cargoes from US, Iran and India, who have been ramping up production with the start-up of new plants since 2H17.
- Chinese government measures on 31 May to strictly control solar installations and reduce subsidies, which have resulted in declining demand for EVA for solar panel encapsulant film.
- Naphtha feedstock prices having risen by 11% or USD60/t YTD, pressuring product margins, although we note this increase has lagged the increase in Dubai oil prices, which have risen 22% over the same period.

Stable margin outlook for 2H18 on reduced production

Despite all the above obstacles, chemical margins remain healthy at present, with the majority above their three-year historical averages. In particular, we note that bellwether ethylene margins remain at record high levels at present.

Exhibit 4: Chemical margin trend (3-yr average vs 3Q18)

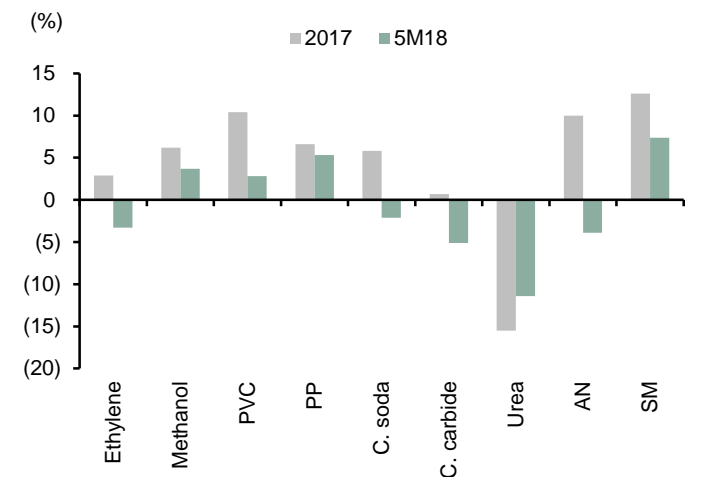


Source: Datastream

With the exception of PE, we expect chemical margins to broadly stabilise in 2H18 for these reasons:

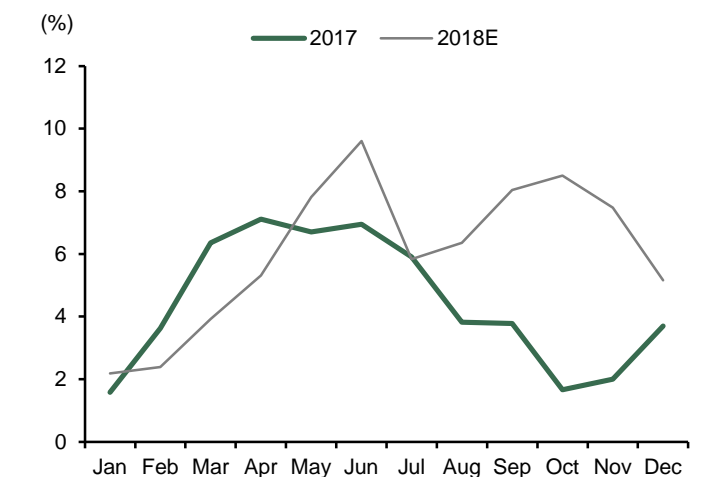
- Chemical production in China continues to be restrained by anti-pollution efforts. On average, production of nine major chemicals in 5M18 has declined by 1% y-y, a reversal from growth of 4.4% in 2017.
- Asian naphtha cracker operating rates are set to fall in the Sep-Nov period due to a higher level of planned maintenance, and three crackers in Japan are also facing reduced run rates in 2H18 due to plant mechanical problems.

Exhibit 5: China chemical production growth



Source: NBS

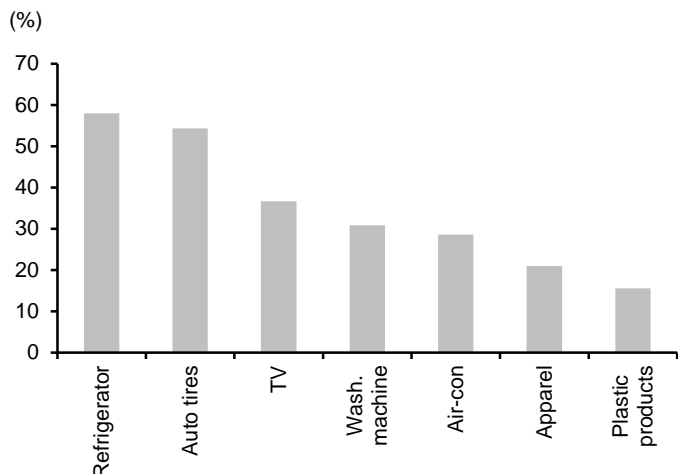
Exhibit 6: Asian naphtha cracker maintenance



Source: IHS

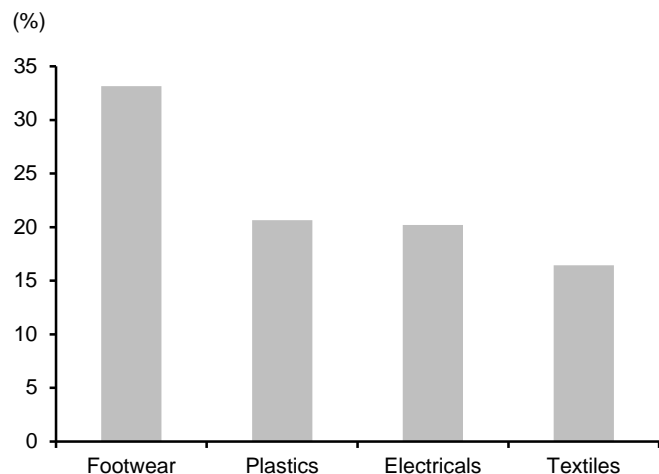
- The US-China trade war may have only a limited impact on China's chemical demand. We estimate that around 30% of China's chemical production is exported in the form of finished goods and the share of these exported finished goods going to the US is around 25%. Therefore, only 8% of China's chemical production would be directly impacted by the potential hike in tariffs.
- In the event that the trade war escalates, we believe supply chains in Asia would reorganise in a way that would result in less chemical imports into China (due to lower production of finished goods), but which would see other countries in Asia absorb these flows of chemicals as production of finished goods shifts there.

Exhibit 7: China exports as % of production (2017)



Source: NBS

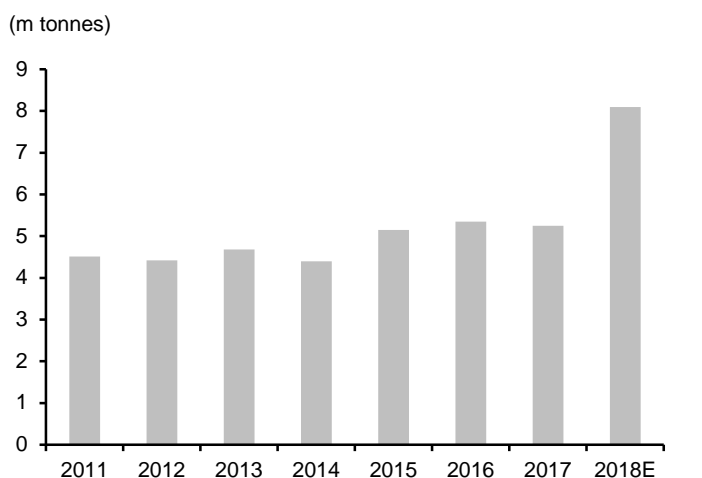
Exhibit 8: China exports to US as % of total exports (2017)



Source: NBS

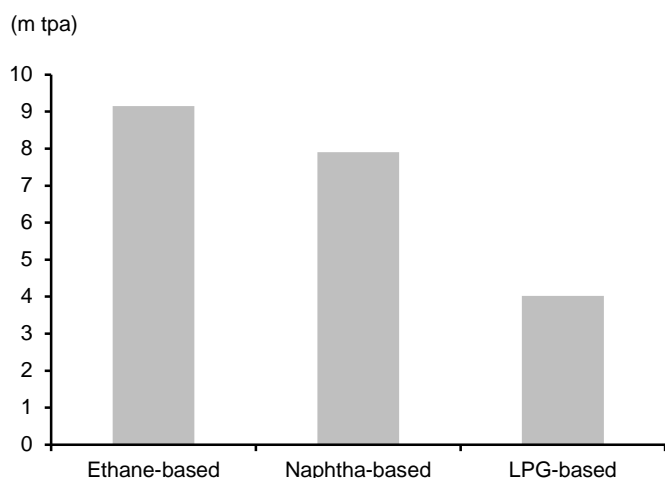
- China has threatened to impose tariffs on US chemical exports, which may result in US exports heading towards Europe instead. As large US PE capacity additions are in the process of ramping up this year, we believe the impact of the anticipated increase in US exports to Asia may be somewhat diluted, thus reducing the downwards pressure on Asian PE margins.
- Longer-term, the uncertainty over US-China relations is likely to negatively affect existing plans to add substantial ethane-based cracker capacity in China, where there are current plans to add 9m tpa of such capacity in 2020-24. Since ethane cargoes can only be sourced from the US, we believe it is quite likely that these projects may be delayed or cancelled, reducing future supply growth.

Exhibit 9: US PE exports



Sources: IHS; BNP Paribas estimates

Exhibit 10: China planned cracker projects (2020-24)



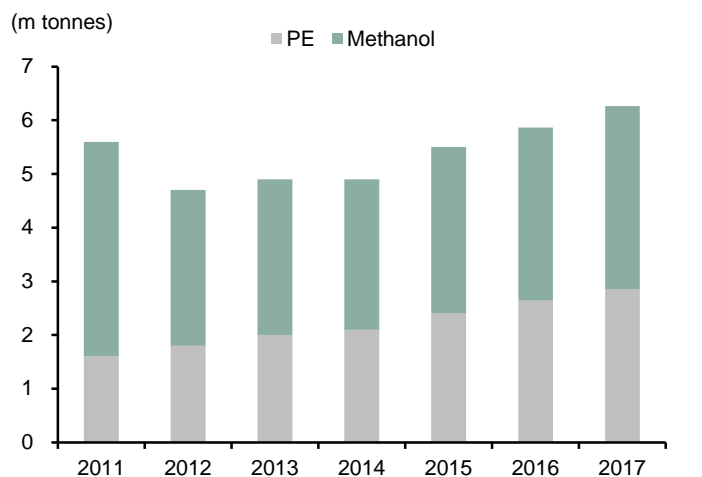
Source: IHS

- The decision by the US to withdraw from the Joint Comprehensive Plan of Action regulating Iran's nuclear activities in May is likely to result in the re-imposition of financial sanctions on Iran. The impact of financial sanctions is likely to be the most severe on oil markets, but there is also likely to be a material negative

impact on exports of Iran chemicals, which had increased by 1.3m t in 2017 compared with 2014 levels.

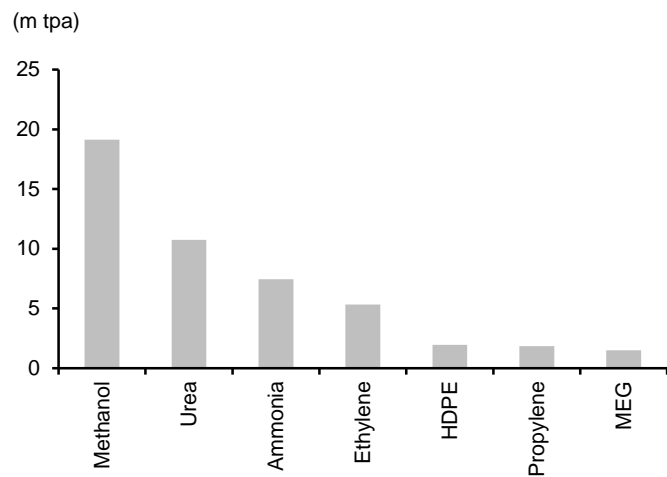
- The re-imposition of sanctions on Iran is also likely to reduce investment in Iran's chemical sector, introducing downside risks to Iran's aggressive plans to rapidly expand chemical capacity, particularly in methanol and urea. For example, Total has [signalled](#) that it would exit Iran unless it was granted a specific project waiver by the US.

Exhibit 11: Iran chemical exports



Source: IHS

Exhibit 12: Iran chemical projects (2015-20)



Source: ICIS

Korea chemicals appear oversold while Taiwan has mostly peaked

To take into account the developments discussed above, we make the following adjustments to our price and margin forecasts.

Exhibit 13: Changes to chemical price and margin estimates

	2018E			2019E			2020E		
	New (USD/t)	Old (USD/t)	Change Chg (%)	New (USD/t)	Old (USD/t)	Change Chg (%)	New (USD/t)	Old (USD/t)	Change Chg (%)
Prices									
Methanol	375	350	7	370	340	9	360	350	3
Margins									
Ethylene – Naphtha	640	600	7	620	620	0	630	630	0
LDPE – Naphtha	520	570	(9)	560	600	(7)	610	630	(3)
MEG – Ethylene	150	180	(17)	140	140	0	120	120	0
PVC – Ethylene	282	312	(10)	322	332	(3)	330	340	(3)
AN – Propylene	900	800	13	760	760	0	680	680	0
Butadiene – Naphtha	800	700	14	750	750	0	800	800	0
SBR – Naphtha	1,108	1,148	(3)	1,138	1,208	(6)	1,209	1,259	(4)
Benzene – Naphtha	250	310	(19)	300	360	(17)	280	340	(18)
MMA – Acetone	1,500	1,400	7	1,268	1,280	(1)	1,196	1,200	(0)
PTA – PX	150	115	30	120	120	0	130	130	0

Source: BNP Paribas estimates

The key changes to our forecasts are:

- **Methanol** – we raise our price forecasts by 3-9% for 2018-20, to reflect suppressed China production and potential loss of Iran exports.
- **Ethylene** – we raise our margin forecast for 2018 by 7%, to reflect reduced supply from Japan due to plant mechanical problems at Keiyo Ethylene and Mitsui Chemicals.
- **LDPE** – we lower our margin forecasts by 3-9% for 2018-20, to reflect weaker-than-expected demand from closures of converters for environmental inspections.

- **MEG** – we lower our margin forecast for 2018 by 17% to reflect the larger-than-expected inventory build-up in the last two months.
- **Benzene** – we lower our margin forecasts by 17-19% for 2018-20, to reflect the larger-than-expected production from China reforming capacity additions.
- **AN** – we raise our margin forecast by 13% for 2018, to reflect a greater degree of production loss from heavy plant maintenance and environmental inspections.
- **MMA** – we raise our margin forecast by 7% for 2018, to reflect the slower-than-expected new plant start-ups in the Middle East with additional capacity of 340ktpa and additional plant maintenance in 2H18, and slightly lower 2019 margins as we expect production to increase in response to the strong 2018 profitability.
- **PTA** – we raise our margin forecast by 30% for 2018E to reflect a higher level of plant maintenance in China during 2018, as well as strong polyester production with the strict enforcement of China's ban on imports of scrap plastic.

To reflect these changes to product margin estimates, as well as company-specific factors, we make the following changes to our earnings estimates for each company:

- **Formosa group** – we raise our 2018-20 net profit estimates by 0-8% to take into account the stronger-than-expected 2Q18 results (as a result of forex and inventory gains) and higher dividends from Nanya Tech.
- **LGC & LC** – we lower our 2018-20 net profit estimates by 1-4% to reflect lower PE and MEG margins.
- **CAP** – we lower our 2018-19E net profit by 2-7% to reflect weaker PE margins and lower plant utilisation rates due to revamping of the plant furnace to increase ethylene capacity throughout 2019. We also introduce our 2020 estimates.

Exhibit 14: Changes to earnings estimates and target price

	Unit	New reported NP			Change (%)			Rating		Target price (LC)		Upside (%)
		2018E	2019E	2020E	2018E	2019E	2020E	New	Old	New	Old	
FPCC	TWD b	74.6	60.4	69.2	6	4	3	REDUCE	Reduce	100.00	100.00	(15.6)
LGC	KRW b	1,886	1,800	1,747	(1)	(3)	(4)	BUY	Buy	395,000	400,000	22.9
LC	KRW b	1,794	1,870	2,003	(3)	(2)	(4)	BUY	Buy	465,000	500,000	39.8
FPC	TWD b	57.5	56.3	59.4	8	3	2	HOLD	Hold	112.00	110.00	4.7
NYP	TWD b	58.6	55.7	53.2	4	1	0	BUY	Buy	96.00	95.00	14.1
FCFC	TWD b	52.4	47.5	48.9	6	3	2	HOLD	Hold	116.00	115.00	3.1
CAP	USD m	261.4	280.1	216.7	(2)	(7)	-	HOLD	Hold	4,750.00	4,500.00	(6.4)

As of 17 Jul 2018

Sources: Factset; BNP Paribas estimates

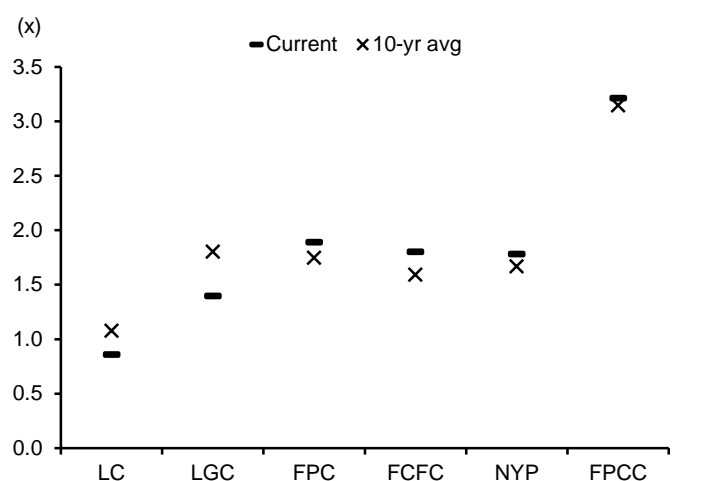
Overall, we believe the chemical sector has weathered the obstacles this year in a resilient manner, and we expect margins to stabilise at present levels, which still represent a mid-to-upcycle level.

In this context, we see good value in Lotte Chemical and LG Chem, whose P/BV are trading 20% and 22% below their historical 10-year averages, respectively. In particular, we believe Lotte Chem remains undervalued as we expect it to generate at 2018 ROE of 14.7% against a P/BV of 0.9x, a valuation disparity that should narrow over time given the rising dividend payout ratio and diversification of product mix. LGC's EV battery division also stands to benefit from the recent decline in battery raw material prices (lithium and cobalt prices down 37% and 25% respectively over the past 3M).

In comparison, share prices of the Formosa group are all at record high levels, and we see less upside potential from current levels (with the exception of Nanya

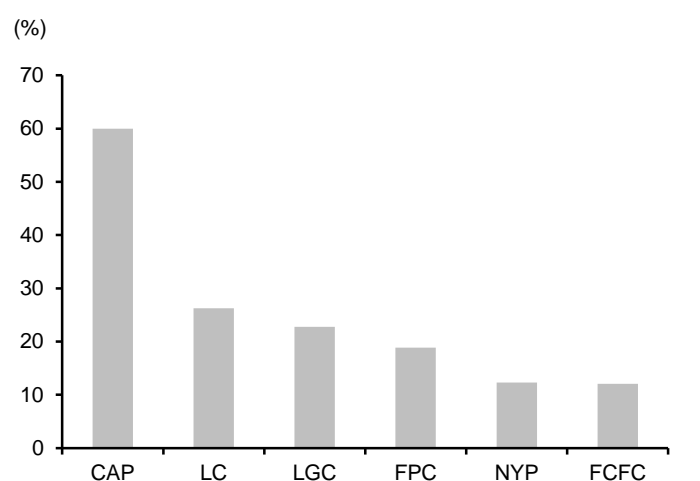
Plastics) as earnings contributions from Formosa Petrochemical are likely to decline in 2H18 due to worsening refining margins.

Exhibit 15: Sector forward P/BV comparison



Sources: Factset; BNP Paribas estimates

Exhibit 16: Ethylene & PE as % of net profit (2017)



Source: BNP Paribas estimates

Exhibit 17: Regional valuation comparison

	BBG code	Rating	Mkt.cap (USD b)	Price (LC)	TP (LC)	P/E		P/BV		ROE		Div yield		EV/EBITDA	
						18E (x)	19E (x)	18E (x)	19E (x)	18E (%)	19E (%)	18E (%)	19E (%)	18E (x)	19E (x)
FPCC	6505 TT	REDUCE	37.0	118.5	100.0	15.1	18.7	3.1	3.1	21.3	16.7	4.9	4.0	10.2	12.2
LGC	051910 KS	BUY	22.2	321,500	395,000	13.1	13.8	1.4	1.3	11.3	9.9	1.9	1.9	6.6	6.5
FPC	1301 TT	HOLD	22.3	107.0	112.0	11.8	12.1	1.9	1.8	16.2	15.1	6.3	6.1	17.7	19.3
NYP	1303 TT	BUY	21.9	84.1	96.0	11.4	12.0	1.8	1.7	16.1	14.7	6.5	6.1	13.6	14.4
FCFC	1326 TT	HOLD	21.6	112.5	116.0	12.5	13.9	1.8	1.7	14.5	12.7	5.9	5.4	11.5	12.6
PCHEM	PCHEM MK	HOLD	17.4	8.80	8.30	16.3	15.5	2.3	2.2	14.8	14.4	3.1	3.2	9.7	9.1
LC	011170 KS	BUY	10.1	332,500	465,000	6.4	6.1	0.9	0.8	14.7	13.7	3.1	4.1	4.3	4.0
CAP	TPIA IJ	HOLD	6.3	5,075	4,750	24.1	22.5	3.5	3.2	15.1	14.8	1.7	1.8	13.0	13.0

As of 17 July 2018

Sources: Factset; BNP Paribas estimates

Target price derivation

Lotte Chemical: We cut our TP to KRW465,000 (from KRW500,000), based on a EV/CE of 1.48x (from 1.58x), derived from a 2018E ROCE of 14.7% (from 15.8%) and WACC of 9% (unchanged). We maintain our BUY rating. The key downside risk is weaker-than-expected chemical demand and plant mechanical failure.

LG Chem: We lower our SoTP based TP to KRW395k from KRW400k as we cut the valuation of the chemical division to KRW3,201b from KRW3,256b due to our lower chemical margin assumptions. Our valuation of LGC's other divisions as well as our target EV-EBITDA multiples remain materially unchanged. We maintain our BUY rating and see the key downside risk from slower-than-expected EV adoption.

Exhibit 18: TP derivation – LGC

	SoTP		EBITDA		Basis
	(KRW b)	(KRW/sh)	(KRW b)	(x)	
Chemicals	22,408	289,211	3,201	7	7x 2018-19E EBITDA
I&E	1,664	21,476	238	7	7x 2018-19E EBITDA
Small battery	(219)	(2,829)	(31)	7	7x 2018-19E EBITDA
Large battery	5,684	73,363	812	7	7x discounted 2020E EBITDA
Hannong	733	9,464	105	7	7x 2018-19E EBITDA
Life science	742	9,579	106	7	7x 2018-19E EBITDA
Net cash/(debt)	(428)	(5,526)			
Target price	30,584	395,000			

Source: BNP Paribas estimates

Formosa Plastic: We raise our SoTP based TP to TWD112 from TWD110 as we raise the valuation of FPC's core business to TWD251b (from TWD237b) on a new 2018-19E ROIC of 20% (from 18%) following our earnings upgrade. We maintain our HOLD rating and see the key upside and downside risks coming from better or worse-than-expected chemical demand.

Exhibit 19: TP derivation – FPC

	Unit	Value (TWD m)	TWD/share	Comments
Average invested capital	TWD m	101,287		At 2.5x EV/IC
Target EV/IC	x	2.5		
Implied EV	TWD m	251,251	39.5	
Less debt	TWD m	(46,947)	(7.4)	2017 net debt
Add investments:				
Formosa Petrochem. (30%)	TWD m	271,967	42.7	TP @TWD100
Nan Ya Plastic (10%)	TWD m	75,138	11.8	TP @TWD96
Formosa Chemical (3%)	TWD m	22,849	3.6	TP @TWD116
Formosa Sumco (3532 TT)	TWD m	32,510	5.1	Market price @TWD144.5 as at 17/7
Nanya Tech (2408 TT)	TWD m	29,760	4.7	Market price @TWD88.8 as at 17/7
FPC USA (22%)	TWD m	51,083	8.0	7x 2019E EV/EBITDA
Formosa Olefins (43%)	TWD m	23,208	3.6	7x 2019E EV/EBITDA
Other investments	TWD m	31,246	4.9	1x 2017 BV
Total investments	TWD m	510,873		5% holdco discount
Implied market capitalisation	TWD m	715,178		
Target price	TWD		112.0	

Source: BNP Paribas estimates

Formosa Chemicals: We raise our SoTP-based TP to TWD116 (from TWD115) as we raise the valuation of FCFC's core business to TWD352b (from TWD344b) on our new 2018-19E ROIC of 17% (from 16%) following our earnings upgrade. We maintain our HOLD rating and see the key upside and downside risks coming from better or worse-than-expected chemical demand.

Exhibit 20: TP derivation – FCFC

	Unit	Value (TWD m)	TWD/share	Comments
Average invested capital	TWD m	176,570		
Target EV/IC	x	2.0		
Implied EV	TWD m	352,176	60.1	
Less debt	TWD m	(71,058)	(12.1)	
Add associates:				
FPCC (25%)	TWD m	230,053	39.3	TP @TWD100
NYP (5%)	TWD m	39,663	6.8	TP @TWD96
FPC (8%)	TWD m	54,544	9.3	TP @TWD112
FTC (1434 TT)	TWD m	20,258	3.5	Market price @TWD32.5 as of 17/7
Nanya Tech (2408 TT)	TWD m	29,492	5.0	Market price @TWD88 as of 17/7
Other investments	TWD m	24,879	4.2	At 1x book value
Implied market capitalisation	TWD m	680,006		
Target price	TWD		116.0	

Source: BNP Paribas estimates

Nan Ya Plastics: Our raise our SoTP-based TP to TWD96 (from TWD95) as we raise the valuation of NYP's core business to TWD350b (from TWD340b) on our new 2018-19E ROIC of 11.5% (from 11%) following our earnings upgrade. We maintain our BUY rating and see the key downside risk coming from worse-than-expected chemical demand and plant mechanical failure.

Exhibit 21: TP derivation – NYP

	Unit	Value	TWD/share	Comments
Core business	TWD m	349,796	44.5	At 1.3x EV/IC
Listed investments	TWD m	356,595	45.4	
Non-listed investments	TWD m	90,869	11.6	At 1x book value
Sum-of-parts	TWD m	797,260	101.5	
Less: net debt	TWD m	(44,067)	(5.6)	2017 net debt
Price target	TWD	841,327	96.0	
Listed investments				
Formosa Plastics (4%)	TWD m	33,012	4.2	TP @TWD112
Formosa C&F (2%)	TWD m	16,385	2.1	TP @TWD116
Formosa Petrochem (24%)	TWD m	219,955	28.0	TP @TWD100
Nan Ya Tech (33%)	TWD m	79,805	10.2	Market price @TWD88 as of 17/7
Nan Ya PCB (68%)	TWD m	11,041	1.0	Market price @TWD27 as of 17/7
Total		360,197	45.4	

Source: BNP Paribas estimates

Chandra Asri: We raise our TP to IDR4,750 (from a split-adjusted IDR4,500) based on an EV/CE of 2.6x (from 2.9x) derived from an across-the cycle 2017-19E ROCE of 21.1% (from 2017E of 26.1%), WACC of 8.5% (unchanged) and 1% terminal growth rate. The higher TP comes mainly from the addition of the second naphtha cracker, which we value based on an IRR of 12.5% and WACC of 8%. We maintain our HOLD rating and see the key upside and downside risks coming from better or worse-than-expected chemical demand.

Exhibit 22: TP derivation – CAP

		Value	IDR/share
Capital employed	USD m	1,931	
Target EV/CE	(x)	2.6	
Implied EV	USD m	4,952	3,971
Add cash/(debt)	USD m	232	186
Add CAP 2	USD m	730	585
Implied market capitalisation	USD m	5,914	
Target price	IDR	4,750	

Source: BNP Paribas estimates

Financial statements

Lotte Chemical

Profit and Loss (KRW b) Year Ending Dec	2016A	2017A	2018E	2019E	2020E
Revenue	13,224	15,875	13,869	14,059	15,898
Cost of goods sold	(9,396)	(11,476)	(10,085)	(10,113)	(11,525)
Gross profit	3,828	4,399	3,784	3,946	4,373
Other operating income	-	-	-	-	-
Operating costs	(722)	(863)	(872)	(880)	(915)
Operating EBITDA	3,105	3,536	2,912	3,065	3,458
Depreciation	(561)	(606)	(690)	(732)	(848)
Goodwill amortisation	0	0	0	0	0
Operating EBIT	2,544	2,930	2,222	2,334	2,609
Net financing costs	(97)	(11)	(6)	(14)	(14)
Associates	71	284	264	250	225
Recurring non operating income	71	284	264	250	225
Non recurring items	(31)	(105)	0	0	0
Profit before tax	2,487	3,099	2,480	2,569	2,821
Tax	(650)	(800)	(573)	(557)	(623)
Profit after tax	1,837	2,299	1,907	2,013	2,198
Minority interests	(0)	(41)	(113)	(142)	(194)
Preferred dividends	0	0	0	0	0
Other items	-	-	-	-	-
Reported net profit	1,837	2,258	1,794	1,870	2,003
Non recurring items & goodwill (net)	31	105	0	0	0
Recurring net profit	1,868	2,363	1,794	1,870	2,003
Per share (KRW)					
Recurring EPS *	54,511	68,930	52,328	54,571	58,450
Reported EPS	53,593	65,875	52,328	54,571	58,450
DPS	4,000	10,500	10,466	13,643	14,612
Diluted shares (used to calculate per share data)	34	34	34	34	34
Growth					
Revenue (%)	12.9	20.0	(12.6)	1.4	13.1
Operating EBITDA (%)	49.0	13.9	(17.6)	5.3	12.8
Operating EBIT (%)	57.9	15.2	(24.1)	5.0	11.8
Recurring EPS (%)	74.9	26.5	(24.1)	4.3	7.1
Reported EPS (%)	85.1	22.9	(20.6)	4.3	7.1
Operating performance					
Gross margin inc depreciation (%)	24.7	23.9	22.3	22.9	22.2
Operating EBITDA margin (%)	23.5	22.3	21.0	21.8	21.7
Operating EBIT margin (%)	19.2	18.5	16.0	16.6	16.4
Net margin (%)	14.1	14.9	12.9	13.3	12.6
Effective tax rate (%)	26.1	25.8	23.1	21.7	22.1
Dividend payout on recurring profit (%)	7.3	15.2	20.0	25.0	25.0
Interest cover (x)	27.0	n/a	n/a	n/a	n/a
Inventory days	51.3	47.9	55.8	56.3	53.0
Debtor days	35.6	37.2	43.6	42.5	40.4
Creditor days	36.7	46.8	54.4	47.9	45.1
Operating ROIC (%)	39.5	32.8	19.6	18.2	18.4
ROIC (%)	24.3	21.4	14.2	13.3	13.4
ROE (%)	22.1	22.7	14.7	13.7	13.2
ROA (%)	14.2	13.6	9.7	9.8	9.9

*Pre exceptional pre-goodwill and fully diluted

Source: Lotte Chemical, BNP Paribas estimates

Financial statements

Lotte Chemical

Cash Flow (KRW b) Year Ending Dec	2016A	2017A	2018E	2019E	2020E
Recurring net profit	1,868	2,363	1,794	1,870	2,003
Depreciation	561	606	690	732	848
Associates & minorities	-	-	-	-	-
Other non-cash items	853	(778)	(150)	(108)	(31)
Change in working capital	(11)	(569)	(400)	(95)	(378)
Cash flow from operations	3,272	1,621	1,934	2,399	2,443
Capex - maintenance	-	-	-	-	-
Capex - new investment	(1,588)	(2,020)	(1,600)	(1,600)	(1,600)
Net acquisitions & disposals	-	-	-	-	-
Other investments (net)	-	-	-	-	-
Cash flow from Investing	(1,588)	(2,020)	(1,600)	(1,600)	(1,600)
Dividends paid	(86)	(137)	(360)	(359)	(468)
Equity finance	0	1,012	0	0	0
Debt finance	567	104	(1,000)	0	0
Other financing cash flows	-	-	-	-	-
Cash flow from Financing	481	979	(1,360)	(359)	(468)
Non recurring cash flows	-	-	-	-	-
Other adjustments	(2,334)	(55)	0	0	0
Net other adjustments	(2,334)	(55)	0	0	0
Movement in cash	(169)	525	(1,026)	440	375

Per share (KRW)	2016A	2017A	2018E	2019E	2020E
Free cash flow to firm (FCFF)	1,760	(292)	408	838	882
Free cash flow to equity (FCFE)	(83)	(350)	(666)	799	843
FCFF per share	51,360	(8,517)	11,890	24,461	25,719
FCFE per share	(2,433)	(10,210)	(19,445)	23,302	24,596
Recurring cash flow per share	95,771	63,901	68,088	72,766	82,292

Balance Sheet (KRW b) Year Ending Dec	2016A	2017A	2018E	2019E	2020E
Tangible fixed assets (gross)	6,108	7,322	8,386	9,367	10,366
Less: Accumulated depreciation	(561)	(606)	(690)	(732)	(848)
Tangible fixed assets (Net)	5,547	6,716	7,696	8,635	9,518
Intangible fixed assets (Net)	1,792	1,711	1,711	1,711	1,711
Long-term financial assets	-	-	-	-	-
Invest. in associates & subsidiaries	2,236	2,499	2,763	3,013	3,238
Cash & equivalents	2,669	3,194	2,168	2,608	2,983
A/C receivable	1,552	1,682	1,628	1,650	1,866
Inventories	1,477	1,536	1,549	1,570	1,776
Other current assets	153	1,813	1,813	1,813	1,813
Current assets	5,852	8,225	7,158	7,641	8,438
Other assets	440	400	400	400	400
Total assets	15,867	19,551	19,728	21,399	23,304
Common equity	9,363	11,490	12,923	14,435	15,971
Minorities etc	38	765	879	1,021	1,215
Total Shareholders' equity	9,401	12,255	13,802	15,456	17,186
Long term debt	2,442	2,757	1,757	1,757	1,757
Other long-term liabilities	575	749	749	749	749
Long-term liabilities	3,017	3,505	2,505	2,505	2,505
A/C payable	1,473	1,923	1,553	1,571	1,746
Short term debt	1,415	704	704	704	704
Other current liabilities	561	1,164	1,164	1,164	1,164
Current liabilities	3,449	3,791	3,421	3,439	3,614
Total liabilities	15,867	19,551	19,728	21,399	23,304
Net working capital	(266)	1,240	1,569	1,595	1,841
Invested capital	9,748	12,566	14,139	15,353	16,708

* includes convertibles and preferred stock which is being treated as debt

Per share (KRW)	2016A	2017A	2018E	2019E	2020E
Book value per share	273,176	335,219	377,047	421,152	465,959
Tangible book value per share	220,882	285,311	327,139	371,245	416,052

Financial strength	2016A	2017A	2018E	2019E	2020E
Net debt/Equity (%)	12.6	2.2	2.1	Neg.	Neg.
Net debt/total assets (%)	7.5	1.4	1.5	Neg.	Neg.
Current ratio (x)	1.7	2.2	2.1	2.2	2.3
CF interest cover (x)	16.5	n/a	n/a	n/a	n/a

Valuation	2016A	2017A	2018E	2019E	2020E
Recurring P/E (x) *	6.1	4.8	6.4	6.1	5.7
Recurring P/E @ target price (x) *	8.5	6.7	8.9	8.5	8.0
Reported P/E (x)	6.2	5.0	6.4	6.1	5.7
Dividend yield (%)	1.2	3.2	3.1	4.1	4.4
P/CF (x)	3.5	5.2	4.9	4.6	4.0
P/FCF (x)	n/a	n/a	n/a	14.3	13.5
Price/book (x)	1.2	1.0	0.9	0.8	0.7
Price/tangible book (x)	1.5	1.2	1.0	0.9	0.8
EV/EBITDA (x) **	4.1	3.5	4.3	4.0	3.5
EV/EBITDA @ target price (x) **	5.1	4.5	5.5	5.2	4.6
EV/invested capital (x)	1.3	1.0	0.9	0.8	0.7

* Pre exceptional & pre-goodwill and fully diluted

** EBITDA includes associate income and recurring non operating income

Source: Lotte Chemical, BNP Paribas estimates

Financial statements

LG Chem

Profit and Loss (KRW b) Year Ending Dec	2016A	2017A	2018E	2019E	2020E
Revenue	20,659	25,698	25,972	26,907	27,285
Cost of goods sold	(15,258)	(18,732)	(19,306)	(20,219)	(20,560)
Gross profit	5,401	6,966	6,666	6,688	6,725
Other operating income	-	-	-	-	-
Operating costs	(2,072)	(2,635)	(2,688)	(2,742)	(2,796)
Operating EBITDA	3,329	4,330	3,979	3,947	3,929
Depreciation	(1,337)	(1,402)	(1,405)	(1,425)	(1,481)
Goodwill amortisation	0	0	0	0	0
Operating EBIT	1,992	2,928	2,574	2,522	2,448
Net financing costs	(127)	33	29	(3)	(2)
Associates	(4)	7	6	6	6
Recurring non operating income	(183)	(285)	(139)	(141)	(143)
Non recurring items	(22)	(113)	(14)	0	0
Profit before tax	1,660	2,564	2,449	2,378	2,303
Tax	(379)	(542)	(513)	(545)	(528)
Profit after tax	1,282	2,022	1,935	1,832	1,775
Minority interests	(0)	(77)	(50)	(32)	(28)
Preferred dividends	0	0	0	0	0
Other items	-	-	-	-	-
Reported net profit	1,281	1,945	1,886	1,800	1,747
Non recurring items & goodwill (net)	22	113	14	0	0
Recurring net profit	1,303	2,058	1,900	1,800	1,747
Per share (KRW)					
Recurring EPS *	17,823	26,565	24,526	23,229	22,546
Reported EPS	17,527	25,107	24,340	23,229	22,546
DPS	5,000	6,000	6,000	6,000	6
Diluted shares (used to calculate per share data)	73	77	77	77	77
Growth					
Revenue (%)	2.2	24.4	1.1	3.6	1.4
Operating EBITDA (%)	8.1	30.1	(8.1)	(0.8)	(0.5)
Operating EBIT (%)	9.2	47.0	(12.1)	(2.0)	(2.9)
Recurring EPS (%)	(6.5)	49.0	(7.7)	(5.3)	(2.9)
Reported EPS (%)	11.1	43.3	(3.1)	(4.6)	(2.9)
Operating performance					
Gross margin inc depreciation (%)	19.7	21.6	20.3	19.6	19.2
Operating EBITDA margin (%)	16.1	16.9	15.3	14.7	14.4
Operating EBIT margin (%)	9.6	11.4	9.9	9.4	9.0
Net margin (%)	6.3	8.0	7.3	6.7	6.4
Effective tax rate (%)	22.8	21.1	21.0	22.9	22.9
Dividend payout on recurring profit (%)	28.1	22.6	24.5	25.8	0.0
Interest cover (x)	14.3	n/a	n/a	n/a	n/a
Inventory days	63.4	61.5	65.3	65.4	65.9
Debtor days	63.2	60.0	65.5	63.9	64.5
Creditor days	34.6	36.4	32.5	26.2	26.4
Operating ROIC (%)	18.8	22.1	15.9	14.4	13.5
ROIC (%)	15.1	17.2	12.9	11.8	11.1
ROE (%)	9.7	13.7	11.3	9.9	8.9
ROA (%)	7.3	9.2	7.5	6.8	6.3

*Pre exceptional pre-goodwill and fully diluted

Source: LG Chem, BNP Paribas estimates

Financial statements

LG Chem

Cash Flow (KRW b) Year Ending Dec	2016A	2017A	2018E	2019E	2020E
Recurring net profit	1,303	2,058	1,900	1,800	1,747
Depreciation	1,337	1,402	1,405	1,425	1,481
Associates & minorities	-	-	-	-	-
Other non-cash items	615	(1,644)	635	233	230
Change in working capital	(1,234)	(799)	(878)	(390)	(247)
Cash flow from operations	2,021	1,017	3,062	3,068	3,212
Capex - maintenance	-	-	-	-	-
Capex - new investment	(1,398)	(2,253)	(3,000)	(2,000)	(2,000)
Net acquisitions & disposals	-	-	-	-	-
Other investments (net)	-	-	-	-	-
Cash flow from Investing	(1,398)	(2,253)	(3,000)	(2,000)	(2,000)
Dividends paid	(329)	(366)	(465)	(465)	(465)
Equity finance	0	0	0	0	0
Debt finance	(160)	(40)	0	0	0
Other financing cash flows	-	-	-	-	-
Cash flow from Financing	(489)	(366)	(465)	(465)	(465)
Non recurring cash flows	-	-	-	-	-
Other adjustments	(611)	(98)	0	0	0
Net other adjustments	(611)	(98)	0	0	0
Movement in cash	(478)	(1,699)	(403)	603	747

Per share (KRW)					
Free cash flow to firm (FCFF)	699	(1,135)	84	1,099	1,243
Free cash flow to equity (FCFE)	(149)	(1,333)	62	1,068	1,212
FCFF per share	9,562	(14,653)	1,087	14,189	16,039
FCFE per share	(2,035)	(17,207)	803	13,786	15,636
Recurring cash flow per share	44,518	23,441	50,852	44,635	44,634

Balance Sheet (KRW b) Year Ending Dec	2016A	2017A	2018E	2019E	2020E
Tangible fixed assets (gross)	9,680	11,211	12,772	13,287	13,746
Less: Accumulated depreciation	-	-	-	-	-
Tangible fixed assets (Net)	9,680	11,211	12,772	13,287	13,746
Intangible fixed assets (Net)	832	1,823	1,797	1,797	1,797
Long-term financial assets	-	-	-	-	-
Invest. in associates & subsidiaries	349	352	359	365	370
Cash & equivalents	2,228	530	127	730	1,477
A/C receivable	3,759	4,690	4,625	4,792	4,859
Inventories	2,965	3,352	3,558	3,686	3,738
Other current assets	274	2,634	2,634	2,634	2,634
Current assets	9,226	11,206	10,944	11,842	12,707
Other assets	399	449	449	449	449
Total assets	20,486	25,041	26,321	27,739	29,070
Common equity	13,937	16,169	17,590	18,924	20,206
Minorities etc	114	170	220	252	280
Total Shareholders' equity	14,051	16,339	17,809	19,176	20,486
Long term debt	648	0	0	0	0
Other long-term liabilities	341	2,058	2,058	2,058	2,058
Long-term liabilities	989	2,058	2,058	2,058	2,058
A/C payable	2,887	4,213	3,621	3,672	3,693
Short term debt	2,213	958	1,358	1,358	1,358
Other current liabilities	346	1,474	1,474	1,474	1,474
Current liabilities	5,446	6,645	6,454	6,505	6,526
Total liabilities	20,485	25,042	26,321	27,739	29,070
Net working capital	1,552	4,031	4,363	4,607	4,705
Invested capital	12,812	17,866	19,740	20,504	21,067

* includes convertibles and preferred stock which is being treated as debt

Per share (KRW)					
Book value per share	190,661	208,680	227,020	244,249	260,795
Tangible book value per share	179,278	185,149	203,826	221,055	237,601

Financial strength					
Net debt/Equity (%)	4.5	2.6	6.9	3.3	Neg.
Net debt/total assets (%)	3.1	1.7	4.7	2.3	Neg.
Current ratio (x)	1.7	1.7	1.7	1.8	1.9
CF interest cover (x)	10.9	n/a	n/a	n/a	n/a

Valuation	2016A	2017A	2018E	2019E	2020E
Recurring P/E (x) *	18.0	12.1	13.1	13.8	14.3
Recurring P/E @ target price (x) *	22.2	14.9	16.1	17.0	17.5
Reported P/E (x)	18.3	12.8	13.2	13.8	14.3
Dividend yield (%)	1.6	1.9	1.9	1.9	0.0
P/CF (x)	7.2	13.7	6.3	7.2	7.2
P/FCF (x)	n/a	n/a	n/a	23.3	20.6
Price/book (x)	1.7	1.5	1.4	1.3	1.2
Price/tangible book (x)	1.8	1.7	1.6	1.5	1.4
EV/EBITDA (x) **	7.3	5.9	6.6	6.5	6.4
EV/EBITDA @ target price (x) **	8.7	7.1	7.7	7.8	7.8
EV/invested capital (x)	1.9	1.4	1.3	1.3	1.2

* Pre exceptional & pre-goodwill and fully diluted

** EBITDA includes associate income and recurring non operating income

Source: LG Chem, BNP Paribas estimates

Financial statements

Formosa Chem & Fibre

Profit and Loss (TWD m) Year Ending Dec	2016A	2017A	2018E	2019E	2020E
Revenue	319,205	358,421	366,135	354,556	364,624
Cost of goods sold	(251,311)	(287,399)	(295,180)	(289,904)	(301,899)
Gross profit	67,893	71,023	70,955	64,652	62,725
Other operating income	0	0	0	0	0
Operating costs	(14,116)	(14,282)	(14,356)	(14,182)	(14,585)
Operating EBITDA	53,777	56,740	56,599	50,470	48,140
Depreciation	(20,342)	(17,826)	(16,683)	(15,330)	(14,290)
Goodwill amortisation	0	0	0	0	0
Operating EBIT	33,436	38,914	39,916	35,140	33,851
Net financing costs	(4,132)	(3,113)	(449)	(426)	(107)
Associates	25,265	26,586	25,628	23,900	25,876
Recurring non operating income	26,021	27,881	26,948	25,246	27,250
Non recurring items	(649)	3,025	(113)	0	0
Profit before tax	54,675	66,707	66,302	59,961	60,994
Tax	(5,909)	(6,671)	(8,347)	(7,212)	(7,023)
Profit after tax	48,766	60,036	57,955	52,748	53,970
Minority interests	(4,934)	(5,625)	(5,525)	(5,271)	(5,078)
Preferred dividends	0	0	0	0	0
Other items	0	0	0	0	0
Reported net profit	43,833	54,411	52,430	47,477	48,893
Non recurring items & goodwill (net)	649	(3,025)	113	0	0
Recurring net profit	44,482	51,386	52,543	47,477	48,893
Per share (TWD)					
Recurring EPS *	7.59	8.77	8.96	8.10	8.34
Reported EPS	7.48	9.28	8.95	8.10	8.34
DPS	5.60	7.00	6.69	6.11	6.29
Diluted shares (used to calculate per share data)	5,861.19	5,861.19	5,861.19	5,861.19	5,861.19
Growth					
Revenue (%)	(3.1)	12.3	2.2	(3.2)	2.8
Operating EBITDA (%)	36.8	5.5	(0.2)	(10.8)	(4.6)
Operating EBIT (%)	72.6	16.4	2.6	(12.0)	(3.7)
Recurring EPS (%)	65.8	15.5	2.3	(9.6)	3.0
Reported EPS (%)	58.9	24.1	(3.6)	(9.4)	3.0
Operating performance					
Gross margin inc depreciation (%)	14.9	14.8	14.8	13.9	13.3
Operating EBITDA margin (%)	16.8	15.8	15.5	14.2	13.2
Operating EBIT margin (%)	10.5	10.9	10.9	9.9	9.3
Net margin (%)	13.9	14.3	14.4	13.4	13.4
Effective tax rate (%)	10.8	10.0	12.6	12.0	11.5
Dividend payout on recurring profit (%)	73.8	79.8	74.7	75.4	75.4
Interest cover (x)	14.4	21.5	n/a	n/a	n/a
Inventory days	59.7	51.5	47.9	48.6	47.3
Debtor days	34.6	37.7	36.8	33.0	32.5
Creditor days	31.7	30.3	30.2	29.1	28.3
Operating ROIC (%)	21.5	25.5	28.5	27.9	28.7
ROIC (%)	18.4	19.8	19.9	18.4	18.7
ROE (%)	14.8	15.2	14.5	12.7	12.7
ROA (%)	10.1	10.8	10.1	9.0	8.9

*Pre exceptional pre-goodwill and fully diluted

Source: Formosa Chem & Fibre, BNP Paribas estimates

Financial statements

Formosa Chem & Fibre

Cash Flow (TWD m) Year Ending Dec	2016A	2017A	2018E	2019E	2020E
Recurring net profit	44,482	51,386	52,543	47,477	48,893
Depreciation	20,342	17,826	16,683	15,330	14,290
Associates & minorities	(25,265)	(26,586)	(25,628)	(23,900)	(25,876)
Other non-cash items	35,610	37,148	23,559	22,933	20,153
Change in working capital	(25,812)	(4,416)	8,455	1,554	(10)
Cash flow from operations	49,357	75,358	75,613	63,395	57,449
Capex - maintenance	-	-	-	-	-
Capex - new investment	(8,964)	(11,882)	(6,000)	(6,000)	(6,000)
Net acquisitions & disposals	-	-	-	-	-
Other investments (net)	-	-	-	-	-
Cash flow from Investing	(8,964)	(11,882)	(6,000)	(6,000)	(6,000)
Dividends paid	(20,514)	(32,823)	(41,028)	(39,227)	(35,800)
Equity finance	0	0	0	0	0
Debt finance	(6,910)	(14,519)	(3,846)	0	0
Other financing cash flows	-	-	-	-	-
Cash flow from Financing	(27,424)	(47,341)	(44,874)	(39,227)	(35,800)
Non recurring cash flows	-	-	-	-	-
Other adjustments	0	0	0	0	0
Net other adjustments	0	0	0	0	0
Movement in cash	12,968	16,135	24,738	18,168	15,649
Per share (TWD)					
Free cash flow to firm (FCFF)	42,385.93	65,799.34	70,903.90	58,023.24	51,747.55
Free cash flow to equity (FCFE)	33,482.65	48,958.04	65,766.68	57,394.65	51,449.28
FCFF per share	7.23	11.23	12.10	9.90	8.83
FCFE per share	5.71	8.35	11.22	9.79	8.78
Recurring cash flow per share	12.82	13.61	11.46	10.55	9.80
Balance Sheet (TWD m) Year Ending Dec					
Tangible fixed assets (gross)	130,913	125,346	114,666	105,336	97,046
Less: Accumulated depreciation	-	-	-	-	-
Tangible fixed assets (Net)	130,913	125,346	114,666	105,336	97,046
Intangible fixed assets (Net)	2	1	1	1	1
Long-term financial assets	-	-	-	-	-
Invest. in associates & subsidiaries	66,813	69,088	75,339	80,230	89,657
Cash & equivalents	131,797	147,933	172,671	190,839	206,488
A/C receivable	57,383	62,781	53,202	53,063	53,995
Inventories	42,215	38,837	38,718	38,550	39,674
Other current assets	5,409	4,291	4,291	4,291	4,291
Current assets	236,805	253,842	268,883	286,743	304,448
Other assets	109,903	124,050	124,050	124,050	124,050
Total assets	544,436	572,327	582,939	596,360	615,203
Common equity	319,990	357,670	369,072	377,322	390,414
Minorities etc	59,650	60,831	66,356	71,627	76,705
Total Shareholders' equity	379,640	418,501	435,428	448,950	467,120
Long term debt	78,365	63,846	60,000	60,000	60,000
Other long-term liabilities	7,222	7,554	7,554	7,554	7,554
Long-term liabilities	85,586	71,400	67,554	67,554	67,554
A/C payable	30,554	36,462	33,993	33,893	34,565
Short term debt	42,063	36,897	36,897	36,897	36,897
Other current liabilities	6,593	9,067	9,067	9,067	9,067
Current liabilities	79,210	82,426	79,957	79,856	80,529
Total liabilities	544,436	572,327	582,939	596,360	615,203
Net working capital	25,798	23,484	16,255	16,048	17,431
Invested capital	333,429	341,968	330,311	325,665	328,186
* includes convertibles and preferred stock which is being treated as debt					
Per share (TWD)					
Book value per share	54.59	61.02	62.97	64.38	66.61
Tangible book value per share	54.59	61.02	62.97	64.38	66.61
Financial strength					
Net debt/Equity (%)	Neg.	Neg.	Neg.	Neg.	Neg.
Net debt/total assets (%)	Neg.	Neg.	Neg.	Neg.	Neg.
Current ratio (x)	3.0	3.1	3.4	3.6	3.8
CF interest cover (x)	11.3	20.5	n/a	n/a	n/a
Valuation					
Recurring P/E (x) *	14.8	12.8	12.5	13.9	13.5
Recurring P/E @ target price (x) *	15.3	13.2	12.9	14.3	13.9
Reported P/E (x)	15.0	12.1	12.6	13.9	13.5
Dividend yield (%)	5.0	6.2	5.9	5.4	5.6
P/CF (x)	8.8	8.3	9.8	10.7	11.5
P/FCF (x)	19.7	13.5	10.0	11.5	12.8
Price/book (x)	2.1	1.8	1.8	1.7	1.7
Price/tangible book (x)	2.1	1.8	1.8	1.7	1.7
EV/EBITDA (x) **	13.2	11.9	11.5	12.6	13.0
EV/EBITDA @ target price (x) **	13.5	12.2	11.8	13.0	13.4
EV/invested capital (x)	2.1	2.0	2.0	2.0	1.9
* Pre exceptional & pre-goodwill and fully diluted ** EBITDA includes associate income and recurring non operating income					

Source: Formosa Chem & Fibre, BNP Paribas estimates

Financial statements

Formosa Plastics

Profit and Loss (TWD m) Year Ending Dec	2016A	2017A	2018E	2019E	2020E
Revenue	180,173	206,710	212,687	207,605	208,984
Cost of goods sold	(146,911)	(164,790)	(167,060)	(165,006)	(167,098)
Gross profit	33,262	41,919	45,627	42,598	41,886
Other operating income	-	-	-	-	-
Operating costs	(11,282)	(11,531)	(11,235)	(11,211)	(11,285)
Operating EBITDA	21,980	30,388	34,392	31,388	30,601
Depreciation	(8,963)	(8,450)	(7,417)	(7,469)	(7,221)
Goodwill amortisation	0	0	0	0	0
Operating EBIT	13,017	21,938	26,975	23,918	23,380
Net financing costs	(2,918)	(2,312)	361	(136)	(147)
Associates	33,396	35,501	35,849	37,210	40,687
Recurring non operating income	33,715	35,853	36,211	37,581	41,068
Non recurring items	0	(575)	(61)	0	0
Profit before tax	43,814	54,904	63,485	61,364	64,301
Tax	(4,421)	(5,521)	(5,983)	(5,024)	(4,912)
Profit after tax	39,393	49,383	57,502	56,340	59,390
Minority interests	0	0	0	0	0
Preferred dividends	0	0	0	0	0
Other items	-	-	-	-	-
Reported net profit	39,393	49,383	57,502	56,340	59,390
Non recurring items & goodwill (net)	(0)	575	61	0	0
Recurring net profit	39,392	49,958	57,563	56,340	59,390
Per share (TWD)					
Recurring EPS *	6.19	7.85	9.04	8.85	9.33
Reported EPS	6.19	7.76	9.03	8.85	9.33
DPS	4.60	5.70	6.71	6.58	6.94
Diluted shares (used to calculate per share data)	6,365.74	6,365.74	6,365.74	6,365.74	6,365.74
Growth					
Revenue (%)	(5.9)	14.7	2.9	(2.4)	0.7
Operating EBITDA (%)	16.4	38.3	13.2	(8.7)	(2.5)
Operating EBIT (%)	24.0	68.5	23.0	(11.3)	(2.3)
Recurring EPS (%)	38.3	26.8	15.2	(2.1)	5.4
Reported EPS (%)	27.6	25.4	16.4	(2.0)	5.4
Operating performance					
Gross margin inc depreciation (%)	13.5	16.2	18.0	16.9	16.6
Operating EBITDA margin (%)	12.2	14.7	16.2	15.1	14.6
Operating EBIT margin (%)	7.2	10.6	12.7	11.5	11.2
Net margin (%)	21.9	24.2	27.1	27.1	28.4
Effective tax rate (%)	10.1	10.1	9.4	8.2	7.6
Dividend payout on recurring profit (%)	74.3	72.6	74.3	74.3	74.3
Interest cover (x)	16.0	25.0	n/a	n/a	n/a
Inventory days	42.0	38.5	40.2	42.2	41.6
Debtor days	25.5	26.2	24.9	22.9	22.7
Creditor days	30.2	39.5	37.7	36.4	35.9
Operating ROIC (%)	21.9	43.4	52.2	48.0	49.2
ROIC (%)	17.9	21.7	22.5	20.9	20.8
ROE (%)	13.1	15.2	16.2	15.1	15.3
ROA (%)	9.6	11.2	11.6	11.0	11.2

*Pre exceptional pre-goodwill and fully diluted

Source: Formosa Plastics, BNP Paribas estimates

Financial statements

Formosa Plastics

Cash Flow (TWD m) Year Ending Dec	2016A	2017A	2018E	2019E	2020E
Recurring net profit	39,392	49,958	57,563	56,340	59,390
Depreciation	8,963	8,450	7,417	7,469	7,221
Associates & minorities	(33,396)	(35,501)	(35,849)	(37,210)	(40,687)
Other non-cash items	33,077	3,256	(97)	(372)	(382)
Change in working capital	(9,134)	2,474	245	506	278
Cash flow from operations	38,902	28,637	29,279	26,734	25,820
Capex - maintenance	-	-	-	-	-
Capex - new investment	(3,470)	(6,711)	(6,500)	(5,000)	(5,000)
Net acquisitions & disposals	-	-	-	-	-
Other investments (net)	-	-	-	-	-
Cash flow from Investing	(3,470)	(6,711)	(6,500)	(5,000)	(5,000)
Dividends paid	(22,917)	(29,282)	(36,285)	(42,744)	(41,880)
Equity finance	0	0	0	0	0
Debt finance	(9,182)	(1,920)	12,244	0	0
Other financing cash flows	-	-	-	-	-
Cash flow from Financing	(32,099)	(31,202)	(24,040)	(42,744)	(41,880)
Non recurring cash flows	-	-	-	-	-
Other adjustments	15,041	21,604	22,543	21,559	18,179
Net other adjustments	15,041	21,604	22,543	21,559	18,179
Movement in cash	18,373	12,328	21,282	549	(2,881)

Per share (TWD)					
Free cash flow to firm (FCFF)	36,831.74	23,454.35	23,489.58	22,149.27	21,243.18
Free cash flow to equity (FCFE)	41,289.71	41,610.82	57,566.48	43,292.85	38,999.42
FCFF per share	5.79	3.68	3.69	3.48	3.34
FCFE per share	6.49	6.54	9.04	6.80	6.13
Recurring cash flow per share	7.55	4.11	4.56	4.12	4.01

Balance Sheet (TWD m) Year Ending Dec	2016A	2017A	2018E	2019E	2020E
Tangible fixed assets (gross)	73,368	69,094	67,892	65,423	63,202
Less: Accumulated depreciation	-	-	-	-	-
Tangible fixed assets (Net)	73,368	69,094	67,892	65,423	63,202
Intangible fixed assets (Net)	490	431	431	431	431
Long-term financial assets	-	-	-	-	-
Invest. in associates & subsidiaries	199,416	212,568	225,874	241,525	264,033
Cash & equivalents	117,418	129,746	151,028	151,577	148,696
A/C receivable	38,801	36,848	33,982	33,870	33,956
Inventories	17,140	17,618	19,139	18,976	19,102
Other current assets	0	0	0	0	0
Current assets	173,359	184,212	204,149	204,423	201,754
Other assets	9,034	9,765	9,765	9,765	9,765
Total assets	455,666	476,071	508,112	521,567	539,185
Common equity	313,070	345,010	366,227	379,823	397,333
Minorities etc	0	0	0	0	0
Total Shareholders' equity	313,070	345,010	366,227	379,823	397,333
Long term debt	39,675	37,756	50,000	50,000	50,000
Other long-term liabilities	22,464	22,031	22,031	22,031	22,031
Long-term liabilities	62,140	59,787	72,031	72,031	72,031
A/C payable	26,161	30,906	29,485	29,344	29,453
Short term debt	41,760	27,356	27,356	27,356	27,356
Other current liabilities	12,535	13,012	13,012	13,012	13,012
Current liabilities	80,456	71,274	69,854	69,712	69,821
Total liabilities	455,666	476,071	508,112	521,567	539,185
Net working capital	(24,514)	(16,808)	(16,732)	(16,866)	(16,763)
Invested capital	257,792	275,050	287,230	300,277	320,667

* includes convertibles and preferred stock which is being treated as debt

Per share (TWD)					
Book value per share	49.18	54.20	57.53	59.67	62.42
Tangible book value per share	49.10	54.13	57.46	59.60	62.35

Financial strength					
Net debt/Equity (%)	Neg.	Neg.	Neg.	Neg.	Neg.
Net debt/total assets (%)	Neg.	Neg.	Neg.	Neg.	Neg.
Current ratio (x)	2.2	2.6	2.9	2.9	2.9
CF interest cover (x)	16.3	21.9	n/a	n/a	n/a

Valuation	2016A	2017A	2018E	2019E	2020E
Recurring P/E (x) *	17.3	13.6	11.8	12.1	11.5
Recurring P/E @ target price (x) *	18.1	14.3	12.4	12.7	12.0
Reported P/E (x)	17.3	13.8	11.8	12.1	11.5
Dividend yield (%)	4.3	5.3	6.3	6.1	6.5
P/CF (x)	14.2	26.0	23.5	26.0	26.7
P/FCF (x)	16.5	16.4	11.8	15.7	17.5
Price/book (x)	2.2	2.0	1.9	1.8	1.7
Price/tangible book (x)	2.2	2.0	1.9	1.8	1.7
EV/EBITDA (x) **	29.4	20.3	17.7	19.3	19.9
EV/EBITDA @ target price (x) **	30.8	21.3	18.6	20.4	21.0
EV/invested capital (x)	2.5	2.2	2.1	2.0	1.9

* Pre exceptional & pre-goodwill and fully diluted

** EBITDA includes associate income and recurring non operating income

Source: Formosa Plastics, BNP Paribas estimates

Financial statements

Nanya Plastics

Profit and Loss (TWD m) Year Ending Dec	2016A	2017A	2018E	2019E	2020E
Revenue	275,294	306,140	332,884	334,519	332,265
Cost of goods sold	(226,090)	(237,905)	(266,515)	(270,994)	(274,104)
Gross profit	49,204	68,235	66,369	63,525	58,161
Other operating income	-	-	-	-	-
Operating costs	(18,116)	(20,118)	(19,243)	(19,402)	(19,271)
Operating EBITDA	31,088	48,118	47,125	44,123	38,890
Depreciation	(17,805)	(18,268)	(14,471)	(12,572)	(12,096)
Goodwill amortisation	0	0	0	0	0
Operating EBIT	13,283	29,850	32,655	31,551	26,794
Net financing costs	(2,315)	(2,719)	(258)	104	106
Associates	29,686	34,160	33,342	31,448	32,440
Recurring non operating income	31,579	35,610	34,823	32,960	33,984
Non recurring items	11,555	35	(89)	0	0
Profit before tax	54,102	62,776	67,131	64,615	60,884
Tax	(5,134)	(8,801)	(8,216)	(8,292)	(7,111)
Profit after tax	48,968	53,975	58,916	56,324	53,773
Minority interests	(127)	546	(274)	(631)	(536)
Preferred dividends	0	0	0	0	0
Other items	-	-	-	-	-
Reported net profit	48,840	54,521	58,641	55,693	53,237
Non recurring items & goodwill (net)	(11,555)	(35)	89	0	0
Recurring net profit	37,286	54,486	58,730	55,693	53,237
Per share (TWD)					
Recurring EPS *	4.70	6.87	7.41	7.02	6.71
Reported EPS	6.16	6.87	7.39	7.02	6.71
DPS	4.50	5.10	5.45	5.13	4.91
Diluted shares (used to calculate per share data)	7,930.82	7,930.82	7,930.82	7,930.82	7,930.82
Growth					
Revenue (%)	(8.2)	11.2	8.7	0.5	(0.7)
Operating EBITDA (%)	(14.7)	54.8	(2.1)	(6.4)	(11.9)
Operating EBIT (%)	(28.6)	124.7	9.4	(3.4)	(15.1)
Recurring EPS (%)	9.8	46.1	7.8	(5.2)	(4.4)
Reported EPS (%)	36.7	11.6	7.6	(5.0)	(4.4)
Operating performance					
Gross margin inc depreciation (%)	11.4	16.3	15.6	15.2	13.9
Operating EBITDA margin (%)	11.3	15.7	14.2	13.2	11.7
Operating EBIT margin (%)	4.8	9.8	9.8	9.4	8.1
Net margin (%)	13.5	17.8	17.6	16.6	16.0
Effective tax rate (%)	9.5	14.0	12.2	12.8	11.7
Dividend payout on recurring profit (%)	95.7	74.2	73.5	73.1	73.1
Interest cover (x)	19.4	24.1	n/a	n/a	n/a
Inventory days	59.8	58.4	55.5	54.5	54.0
Debtor days	61.6	61.9	60.6	59.6	60.2
Creditor days	39.8	41.7	53.1	67.1	66.5
Operating ROIC (%)	7.6	17.5	20.7	22.4	19.6
ROIC (%)	12.7	18.2	18.6	17.9	16.4
ROE (%)	11.3	15.7	16.1	14.7	13.6
ROA (%)	7.6	10.5	10.5	9.5	8.8

*Pre exceptional pre-goodwill and fully diluted

Source: Nanya Plastics, BNP Paribas estimates

Financial statements

Nanya Plastics

Cash Flow (TWD m) Year Ending Dec	2016A	2017A	2018E	2019E	2020E
Recurring net profit	37,286	54,486	58,730	55,693	53,237
Depreciation	17,805	18,268	14,471	12,572	12,096
Associates & minorities	(29,686)	(34,160)	(33,342)	(31,448)	(32,440)
Other non-cash items	38,611	(6,848)	(835)	(881)	(1,008)
Change in working capital	(8,734)	(4,992)	23,549	1,022	1,845
Cash flow from operations	55,282	26,753	62,572	36,958	33,730
Capex - maintenance	-	-	-	-	-
Capex - new investment	(10,176)	(9,382)	(8,000)	(8,000)	(8,000)
Net acquisitions & disposals	-	-	-	-	-
Other investments (net)	-	-	-	-	-
Cash flow from Investing	(10,176)	(9,382)	(8,000)	(8,000)	(8,000)
Dividends paid	(26,172)	(35,689)	(40,447)	(43,186)	(40,696)
Equity finance	0	0	0	0	0
Debt finance	(9,359)	(6,697)	3,474	0	0
Other financing cash flows	0	0	0	0	0
Cash flow from Financing	(35,531)	(42,386)	(36,973)	(43,186)	(40,696)
Non recurring cash flows	-	-	-	-	-
Other adjustments	3,142	15,352	19,799	18,979	15,974
Net other adjustments	3,142	15,352	19,799	18,979	15,974
Movement in cash	12,717	(9,662)	37,397	4,751	1,008
Per share (TWD)					
Free cash flow to firm (FCFF)	46,678.79	18,998.29	54,966.02	29,027.17	25,734.96
Free cash flow to equity (FCFE)	38,888.81	26,026.40	77,844.68	47,936.94	41,704.12
FCFF per share	5.89	2.40	6.93	3.66	3.24
FCFE per share	4.90	3.28	9.82	6.04	5.26
Recurring cash flow per share	8.07	4.00	4.92	4.53	4.02
Balance Sheet (TWD m) Year Ending Dec					
Tangible fixed assets (gross)	139,809	132,960	127,768	123,196	119,100
Less: Accumulated depreciation	-	-	-	-	-
Tangible fixed assets (Net)	139,809	132,960	127,768	123,196	119,100
Intangible fixed assets (Net)	2,873	2,680	2,680	2,680	2,680
Long-term financial assets	-	-	-	-	-
Invest. in associates & subsidiaries	159,011	178,471	192,015	204,484	220,949
Cash & equivalents	103,014	93,351	130,749	135,500	136,508
A/C receivable	79,079	77,984	76,217	76,807	76,444
Inventories	35,386	40,731	40,268	40,705	40,436
Other current assets	0	0	0	0	0
Current assets	217,478	212,067	247,233	253,012	253,389
Other assets	18,013	17,894	17,894	17,894	17,894
Total assets	537,185	544,071	587,590	601,265	614,012
Common equity	338,453	355,620	373,814	386,320	398,861
Minorities etc	12,580	11,600	11,874	12,505	13,041
Total Shareholders' equity	351,033	367,220	385,688	398,825	411,903
Long term debt	65,223	58,526	62,000	62,000	62,000
Other long-term liabilities	36,010	38,644	38,644	38,644	38,644
Long-term liabilities	101,233	97,170	100,644	100,644	100,644
A/C payable	43,543	48,626	70,203	70,741	70,410
Short term debt	40,100	29,844	29,844	29,844	29,844
Other current liabilities	1,275	1,210	1,210	1,210	1,210
Current liabilities	84,918	79,681	101,257	101,796	101,465
Total liabilities	537,185	544,071	587,590	601,265	614,012
Net working capital	29,546	39,034	15,227	15,717	15,416
Invested capital	349,253	371,039	355,583	363,970	376,039
* includes convertibles and preferred stock which is being treated as debt					
Per share (TWD)					
Book value per share	42.68	44.84	47.13	48.71	50.29
Tangible book value per share	42.31	44.50	46.80	48.37	49.95
Financial strength					
Net debt/Equity (%)	0.7	Neg.	Neg.	Neg.	Neg.
Net debt/total assets (%)	0.4	Neg.	Neg.	Neg.	Neg.
Current ratio (x)	2.6	2.7	2.4	2.5	2.5
CF interest cover (x)	22.2	14.0	n/a	n/a	n/a
Valuation					
Recurring P/E (x) *	17.9	12.2	11.4	12.0	12.5
Recurring P/E @ target price (x) *	20.4	14.0	13.0	13.7	14.3
Reported P/E (x)	13.7	12.2	11.4	12.0	12.5
Dividend yield (%)	5.4	6.1	6.5	6.1	5.8
P/CF (x)	10.4	21.0	17.1	18.6	20.9
P/FCF (x)	17.2	25.6	8.6	13.9	16.0
Price/book (x)	2.0	1.9	1.8	1.7	1.7
Price/tangible book (x)	2.0	1.9	1.8	1.7	1.7
EV/EBITDA (x) **	21.9	14.0	13.6	14.4	16.3
EV/EBITDA @ target price (x) **	25.0	16.0	15.6	16.5	18.8
EV/invested capital (x)	2.0	1.8	1.8	1.7	1.7
* Pre exceptional & pre-goodwill and fully diluted ** EBITDA includes associate income and recurring non operating income					

Source: Nanya Plastics, BNP Paribas estimates

Financial statements

Chandra Asri Petrochemical

Profit and Loss (USD m) Year Ending Dec	2016A	2017A	2018E	2019E	2020E
Revenue	1,930	2,419	2,501	2,479	2,398
Cost of goods sold	(1,361)	(1,794)	(1,945)	(1,910)	(1,908)
Gross profit	569	624	556	569	489
Other operating income	-	-	-	-	-
Operating costs	(71)	(81)	(83)	(85)	(86)
Operating EBITDA	499	544	473	484	403
Depreciation	(75)	(79)	(83)	(84)	(91)
Goodwill amortisation	0	0	0	0	0
Operating EBIT	424	464	390	401	313
Net financing costs	(17)	(31)	(33)	(35)	(32)
Associates	(6)	(9)	(5)	8	8
Recurring non operating income	(6)	(9)	(5)	8	8
Non recurring items	0	0	0	0	0
Profit before tax	401	425	352	373	289
Tax	(100)	(105)	(91)	(93)	(72)
Profit after tax	300	319	262	280	217
Minority interests	(0)	(1)	(0)	0	0
Preferred dividends	0	0	0	0	0
Other items	-	-	-	-	-
Reported net profit	300	319	261	280	217
Non recurring items & goodwill (net)	0	0	0	0	0
Recurring net profit	300	319	261	280	217

Per share (USD)					
Recurring EPS *	0.02	0.02	0.01	0.02	0.01
Reported EPS	0.02	0.02	0.01	0.02	0.01
DPS	0.0091	0.0071	0.0059	0.0063	0.0049
Diluted shares (used to calculate per share data)	16,435.00	17,833.52	17,833.52	17,833.52	17,833.52
Growth					
Revenue (%)	40.1	25.3	3.4	(0.9)	(3.3)
Operating EBITDA (%)	248.7	9.0	(13.1)	2.5	(16.7)
Operating EBIT (%)	434.9	9.6	(16.0)	2.8	(22.0)
Recurring EPS (%)	1,038.8	(2.1)	(18.0)	7.1	(22.6)
Reported EPS (%)	1,038.8	(2.1)	(18.0)	7.1	(22.6)
Operating performance					
Gross margin inc depreciation (%)	25.6	22.5	18.9	19.6	16.6
Operating EBITDA margin (%)	25.8	22.5	18.9	19.5	16.8
Operating EBIT margin (%)	22.0	19.2	15.6	16.2	13.0
Net margin (%)	15.5	13.2	10.5	11.3	9.0
Effective tax rate (%)	25.1	24.8	25.7	25.0	25.0
Dividend payout on recurring profit (%)	50.0	40.0	40.0	40.0	40.0
Interest cover (x)	24.1	14.7	11.8	11.6	10.0
Inventory days	50.7	44.4	45.3	46.7	45.8
Debtor days	18.0	26.2	30.7	31.4	31.7
Creditor days	78.8	83.8	91.6	94.4	92.5
Operating ROIC (%)	25.3	25.9	19.0	16.6	11.9
ROIC (%)	22.8	23.6	17.6	16.0	11.5
ROE (%)	29.8	22.8	15.1	14.8	10.7
ROA (%)	15.7	13.4	9.3	9.5	7.2

*Pre exceptional pre-goodwill and fully diluted

Source: Chandra Asri Petrochemical, BNP Paribas estimates

Financial statements

Chandra Asri Petrochemical

Cash Flow (USD m) Year Ending Dec	2016A	2017A	2018E	2019E	2020E
Recurring net profit	300	319	261	280	217
Depreciation	75	79	83	84	91
Associates & minorities	-	-	-	-	-
Other non-cash items	19	(22)	(1)	(35)	(19)
Change in working capital	(8)	(15)	8	10	10
Cash flow from operations	386	361	351	338	298
Capex - maintenance	-	-	-	-	-
Capex - new investment	(73)	(215)	(301)	(385)	(99)
Net acquisitions & disposals	-	-	-	-	-
Other investments (net)	-	-	-	-	-
Cash flow from Investing	(73)	(215)	(301)	(385)	(99)
Dividends paid	(43)	(161)	(120)	(105)	(112)
Equity finance	0	378	0	0	0
Debt finance	(65)	191	0	0	0
Other financing cash flows	-	-	-	-	-
Cash flow from Financing	(108)	409	(120)	(105)	(112)
Non recurring cash flows	-	-	-	-	-
Other adjustments	(5)	0	0	0	0
Net other adjustments	(5)	0	0	0	0
Movement in cash	200	554	(70)	(152)	87

Per share (USD)					
Free cash flow to firm (FCFF)	312.44	145.71	49.89	(46.99)	198.73
Free cash flow to equity (FCFE)	242.98	336.85	49.89	(46.99)	198.73
FCFF per share	0.02	0.0082	0.0028	(0.0026)	0.01
FCFE per share	0.01	0.02	0.0028	(0.0026)	0.01
Recurring cash flow per share	0.02	0.02	0.02	0.02	0.02

Balance Sheet (USD m) Year Ending Dec	2016A	2017A	2018E	2019E	2020E
Tangible fixed assets (gross)	1,330	1,533	1,758	2,060	2,075
Less: Accumulated depreciation	0	(76)	(83)	(84)	(91)
Tangible fixed assets (Net)	1,330	1,457	1,675	1,976	1,985
Intangible fixed assets (Net)	75	78	78	78	78
Long-term financial assets	-	-	-	-	-
Invest. in associates & subsidiaries	32	23	18	26	34
Cash & equivalents	309	863	794	642	729
A/C receivable	140	207	214	212	205
Inventories	200	237	245	243	235
Other current assets	43	121	121	121	121
Current assets	693	1,429	1,374	1,219	1,290
Other assets	-	-	-	-	-
Total assets	2,129	2,987	3,146	3,299	3,387
Common equity	1,135	1,663	1,805	1,980	2,085
Minorities etc	7	6	6	6	6
Total Shareholders' equity	1,142	1,669	1,811	1,986	2,091
Long term debt	362	553	553	553	553
Other long-term liabilities	172	178	178	178	178
Long-term liabilities	534	731	731	731	731
A/C payable	344	480	496	492	476
Short term debt	63	78	78	60	60
Other current liabilities	47	29	29	29	29
Current liabilities	454	587	604	581	565
Total liabilities	2,129	2,987	3,146	3,299	3,387
Net working capital	(71)	(22)	(23)	(5)	(3)
Invested capital	1,366	1,537	1,748	2,076	2,094

* includes convertibles and preferred stock which is being treated as debt

Per share (USD)					
Book value per share	0.07	0.09	0.10	0.11	0.12
Tangible book value per share	0.06	0.09	0.10	0.11	0.11

Financial strength					
Net debt/Equity (%)	10.1	Neg.	Neg.	Neg.	Neg.
Net debt/total assets (%)	5.4	Neg.	Neg.	Neg.	Neg.
Current ratio (x)	1.5	2.4	2.3	2.1	2.3
CF interest cover (x)	19.2	18.8	11.7	10.6	10.3

Valuation	2016A	2017A	2018E	2019E	2020E
Recurring P/E (x) *	19.3	19.8	24.1	22.5	29.1
Recurring P/E @ target price (x) *	18.1	18.5	22.5	21.0	27.2
Reported P/E (x)	19.3	19.8	24.1	22.5	29.1
Dividend yield (%)	2.6	2.0	1.7	1.8	1.4
P/CF (x)	14.8	16.7	18.4	19.2	21.8
P/FCF (x)	23.9	18.7	n/a	n/a	31.7
Price/book (x)	5.1	3.8	3.5	3.2	3.0
Price/tangible book (x)	5.5	4.0	3.6	3.3	3.1
EV/EBITDA (x) **	11.9	11.2	13.0	13.0	15.3
EV/EBITDA @ target price (x) **	11.1	10.4	12.1	12.1	14.3
EV/invested capital (x)	4.3	4.0	3.5	3.0	3.0

* Pre exceptional & pre-goodwill and fully diluted

** EBITDA includes associate income and recurring non operating income

Source: Chandra Asri Petrochemical, BNP Paribas estimates

Financial statements

Formosa Petro

Profit and Loss (TWD m) Year Ending Dec	2016A	2017A	2018E	2019E	2020E
Revenue	546,161	624,108	691,797	660,192	683,535
Cost of goods sold	(443,651)	(502,791)	(580,837)	(566,525)	(579,532)
Gross profit	102,510	121,317	110,960	93,667	104,004
Other operating income	-	-	-	-	-
Operating costs	(10,250)	(10,965)	(10,792)	(10,639)	(10,943)
Operating EBITDA	92,261	110,352	100,168	83,027	93,060
Depreciation	(6,051)	(18,694)	(15,067)	(13,746)	(12,601)
Goodwill amortisation	0	0	0	0	0
Operating EBIT	86,209	91,657	85,101	69,281	80,460
Net financing costs	(280)	(2,453)	759	(563)	(641)
Associates	3,568	2,297	4,043	4,438	4,185
Recurring non operating income	5,118	5,138	5,500	5,900	5,651
Non recurring items	(374)	1,746	(182)	0	0
Profit before tax	90,674	96,089	91,179	74,618	85,469
Tax	(14,910)	(15,919)	(16,564)	(14,177)	(16,239)
Profit after tax	75,764	80,170	74,615	60,440	69,230
Minority interests	0	0	0	0	0
Preferred dividends	0	0	0	0	0
Other items	-	-	-	-	-
Reported net profit	75,764	80,170	74,615	60,440	69,230
Non recurring items & goodwill (net)	374	(1,746)	182	0	0
Recurring net profit	76,138	78,424	74,797	60,440	69,230
Per share (TWD)					
Recurring EPS *	7.99	8.23	7.85	6.34	7.27
Reported EPS	7.95	8.42	7.83	6.34	7.27
DPS	6.00	6.30	5.86	4.75	5.44
Diluted shares (used to calculate per share data)	9,525.96	9,525.96	9,525.96	9,525.96	9,525.96
Growth					
Revenue (%)	(13.2)	14.3	10.8	(4.6)	3.5
Operating EBITDA (%)	32.0	19.6	(9.2)	(17.1)	12.1
Operating EBIT (%)	89.5	6.3	(7.2)	(18.6)	16.1
Recurring EPS (%)	60.9	3.0	(4.6)	(19.2)	14.5
Reported EPS (%)	60.2	5.8	(6.9)	(19.0)	14.5
Operating performance					
Gross margin inc depreciation (%)	17.7	16.4	13.9	12.1	13.4
Operating EBITDA margin (%)	16.9	17.7	14.5	12.6	13.6
Operating EBIT margin (%)	15.8	14.7	12.3	10.5	11.8
Net margin (%)	13.9	12.6	10.8	9.2	10.1
Effective tax rate (%)	16.4	16.6	18.2	19.0	19.0
Dividend payout on recurring profit (%)	75.1	76.5	74.7	74.9	74.9
Interest cover (x)	n/a	39.5	n/a	n/a	n/a
Inventory days	43.2	40.4	34.5	33.3	33.3
Debtor days	31.4	31.0	29.3	30.4	30.0
Creditor days	10.9	9.8	9.0	10.9	10.9
Operating ROIC (%)	43.3	46.1	44.8	39.5	47.3
ROIC (%)	35.3	37.8	36.8	32.4	38.0
ROE (%)	26.4	24.0	21.3	16.7	18.4
ROA (%)	17.4	18.3	16.3	12.7	14.2

*Pre exceptional pre-goodwill and fully diluted

Source: Formosa Petro, BNP Paribas estimates

Financial statements

Formosa Petro

Cash Flow (TWD m) Year Ending Dec	2016A	2017A	2018E	2019E	2020E
Recurring net profit	76,138	78,424	74,797	60,440	69,230
Depreciation	6,051	18,694	15,067	13,746	12,601
Associates & minorities	-	-	-	-	-
Other non-cash items	9,042	1,970	(5,189)	(5,900)	(5,651)
Change in working capital	4,411	(2,032)	18,696	4,878	2,450
Cash flow from operations	95,643	97,056	103,371	73,165	78,630
Capex - maintenance	-	-	-	-	-
Capex - new investment	(4,648)	(8,969)	(6,000)	(6,000)	(6,000)
Net acquisitions & disposals	-	-	-	-	-
Other investments (net)	-	-	-	-	-
Cash flow from Investing	(4,648)	(8,969)	(6,000)	(6,000)	(6,000)
Dividends paid	(38,104)	(57,156)	(60,014)	(55,855)	(45,244)
Equity finance	0	0	0	0	0
Debt finance	(24,682)	(53,146)	25,550	0	0
Other financing cash flows	-	-	-	-	-
Cash flow from Financing	(62,786)	(110,301)	(34,464)	(55,855)	(45,244)
Non recurring cash flows	-	-	-	-	-
Other adjustments	0	0	0	0	0
Net other adjustments	0	0	0	0	0
Movement in cash	28,209	(22,214)	62,908	11,309	27,386

Per share (TWD)					
Free cash flow to firm (FCFF)	92,744.63	89,312.79	99,007.09	68,634.76	74,252.75
Free cash flow to equity (FCFE)	66,312.43	34,941.61	122,921.49	67,164.85	72,630.31
FCFF per share	9.74	9.38	10.39	7.21	7.79
FCFE per share	6.96	3.67	12.90	7.05	7.62
Recurring cash flow per share	9.58	10.40	8.89	7.17	8.00

Balance Sheet (TWD m) Year Ending Dec	2016A	2017A	2018E	2019E	2020E
Tangible fixed assets (gross)	116,340	108,777	99,701	91,954	85,353
Less: Accumulated depreciation	-	-	-	-	-
Tangible fixed assets (Net)	116,340	108,777	99,701	91,954	85,353
Intangible fixed assets (Net)	0	0	0	0	0
Long-term financial assets	-	-	-	-	-
Invest. in associates & subsidiaries	40,363	41,198	41,198	41,198	41,198
Cash & equivalents	130,760	108,546	171,454	182,764	210,149
A/C receivable	91,362	98,394	96,485	97,110	99,068
Inventories	52,999	58,376	51,410	51,999	53,842
Other current assets	3,895	884	884	884	884
Current assets	279,016	266,200	320,233	332,756	363,943
Other assets	16,644	15,365	15,365	15,365	15,365
Total assets	452,363	431,541	476,497	481,274	505,860
Common equity	309,099	344,147	358,748	363,333	387,319
Minorities etc	0	0	0	0	0
Total Shareholders' equity	309,099	344,147	358,748	363,333	387,319
Long term debt	67,596	14,450	40,000	40,000	40,000
Other long-term liabilities	7,750	7,827	7,827	7,827	7,827
Long-term liabilities	75,346	22,277	47,827	47,827	47,827
A/C payable	29,806	25,748	30,553	30,744	31,345
Short term debt	25,276	27,726	27,726	27,726	27,726
Other current liabilities	12,836	11,643	11,643	11,643	11,643
Current liabilities	67,918	65,117	69,922	70,114	70,714
Total liabilities	452,363	431,541	476,497	481,274	505,860
Net working capital	80,338	92,537	78,857	79,878	83,079
Invested capital	253,685	257,877	235,121	228,396	224,996

* includes convertibles and preferred stock which is being treated as debt

Per share (TWD)					
Book value per share	32.45	36.13	37.66	38.14	40.66
Tangible book value per share	32.45	36.13	37.66	38.14	40.66

Financial strength					
Net debt/Equity (%)	Neg.	Neg.	Neg.	Neg.	Neg.
Net debt/total assets (%)	Neg.	Neg.	Neg.	Neg.	Neg.
Current ratio (x)	4.1	4.1	4.6	4.7	5.1
CF interest cover (x)	n/a	18.9	n/a	n/a	n/a

Valuation	2016A	2017A	2018E	2019E	2020E
Recurring P/E (x) *	14.8	14.4	15.1	18.7	16.3
Recurring P/E @ target price (x) *	12.5	12.1	12.7	15.8	13.8
Reported P/E (x)	14.9	14.1	15.1	18.7	16.3
Dividend yield (%)	5.1	5.3	4.9	4.0	4.6
P/CF (x)	12.4	11.4	13.3	16.5	14.8
P/FCF (x)	17.0	32.3	9.2	16.8	15.5
Price/book (x)	3.7	3.3	3.1	3.1	2.9
Price/tangible book (x)	3.7	3.3	3.1	3.1	2.9
EV/EBITDA (x) **	11.8	9.6	10.2	12.2	10.6
EV/EBITDA @ target price (x) **	9.9	8.0	8.5	10.1	8.7
EV/invested capital (x)	4.3	4.1	4.4	4.4	4.4

* Pre exceptional & pre-goodwill and fully diluted

** EBITDA includes associate income and recurring non operating income

Source: Formosa Petro, BNP Paribas estimates

Disclaimers and Disclosures

APPENDIX

DISCLAIMERS AND DISCLOSURES APPLICABLE TO NON-US BROKER-DEALER(S): BNP PARIBAS SECURITIES (ASIA) LTD

ANALYST(S) CERTIFICATION

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The disclosure column in the following table lists the important disclosures applicable to each company that has been rated and/or recommended in this report:

Company	Ticker	Disclosure (as applicable)
Chandra Asri Petrochemical	TPIA IJ	1, 2, 3, 4
Formosa Chem & Fibre	1326 TT	2, 3, 4
Formosa Petro	6505 TT	2, 3, 4
Formosa Plastics	1301 TT	2, 3, 4
LG Chem	051910 KS	2, 3, 4
Lotte Chemical	011170 KS	2, 3, 4
Nanya Plastics	1303 TT	2, 3, 4

BNP Paribas represents that:

1. Within the past year, it has managed or co-managed a public offering for this company, for which it received fees.
2. It had an investment banking relationship with this company in the last 12 months.
3. It received compensation for investment banking services from this company in the last 12 months.
4. It expects to receive or intends to seek compensation for investment banking services from the subject company/ies in the next 3 months.
5. It beneficially owns 1% or more of any class of common equity securities of the subject company.
6. It makes a market in securities in respect of this company.
7. The analyst(s) or an individual who assisted in the preparation of this report (or a member of his/her household) has a financial interest position in securities issued by this company. The financial interest is in the common stock of the subject company, unless otherwise noted.
8. The analyst (or a member of his/her household) is an officer, director, employee or advisory board member of this company or has received compensation from the company.

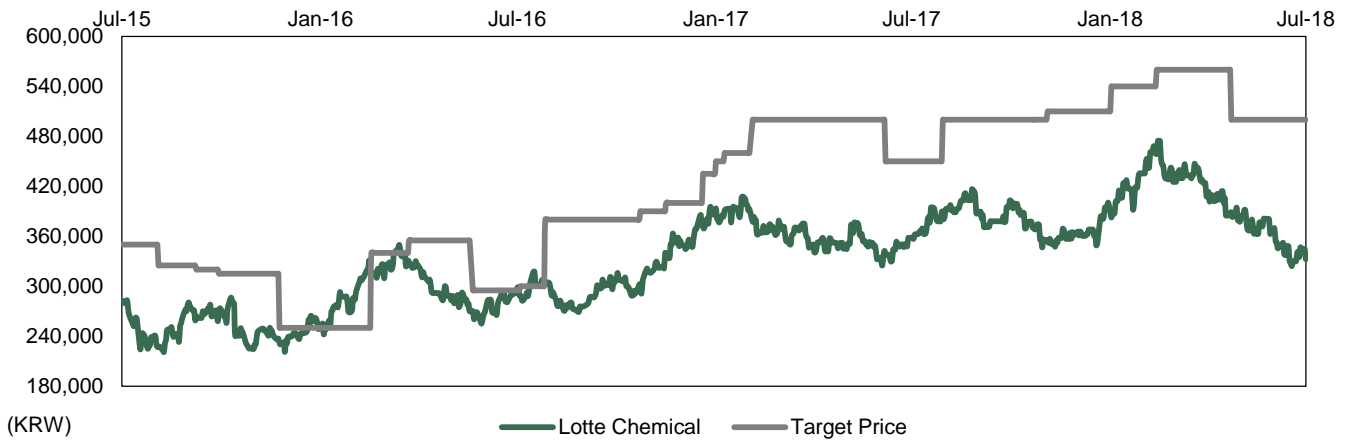
IMPORTANT DISCLOSURES REQUIRED IN KOREA

The disclosure column in the following table lists the important disclosures applicable to each Korea listed company that has been rated and/or recommended in this report:

Company	Ticker	Price (as of 17-Jul-2018 closing price)	Interest
LG Chem	051910 KS	KRW321,500	N/A
Lotte Chemical	011170 KS	KRW332,500	N/A

1. The performance of obligations of the Company is directly or indirectly guaranteed by BNP Paribas Securities Korea Co. Ltd ("BNPPSK") by means of payment guarantees, endorsements, and provision of collaterals and/or taking over the obligations.
2. BNPPSK owns 1/100 or more of the total outstanding shares issued by the Company.
3. The Company is an affiliate of BNPPSK as prescribed by Item 3, Article 2 of the Monopoly Regulation and Fair Trade Act.
4. BNPPSK is the financial advisory agent of the Company for the Merger and Acquisition transaction or of the Target Company whereby the size of the transaction does not exceed 5/100 of the total asset of the Company or the total number of outstanding shares.
5. BNPPSK has taken financial advisory service regarding listing to the Company within the past 1 year.
6. With regards to the tender offer initiated by the Company based on Item 2, Article 133 of the Financial Investment Services and Capital Market Act, BNPPSK acts in the capacity of the agent for the tender offer designated either by the Company or by the target company, provided that this provision shall apply only where tender offer has not expired.
7. The listed company which issued the stocks in question in case where 40 days has not passed since the new shares were listed from the date of entering into arrangement for public offering or underwriting-related agreement for issuance of stocks
8. The Company that has signed a nominated advisor contract with BNPPSK as defined in Item 2 of Article 8 of the KONEX Market Listing Regulation.
9. The Company is recognized as having considerable interests with BNPPSK in relation to No.1 to No. 8.
10. The analyst or his/her spouse owns (including delivery claims of marketable securities based on legal regulations and trading and misc. contracts) the following securities or rights (hereinafter referred to as "Securities, etc." in this Article) regardless of whose name is used in the trading.
 - 1) Stocks, bond with stock certificate, and certificate of pre-emptive rights issued by the Company whose securities dealings are being solicited.
 - 2) Stock options of the Company whose securities dealings are being solicited.
 - 3) Individual stock future, stock option, and warrants that use the stocks specified in Item 1) as underlying.

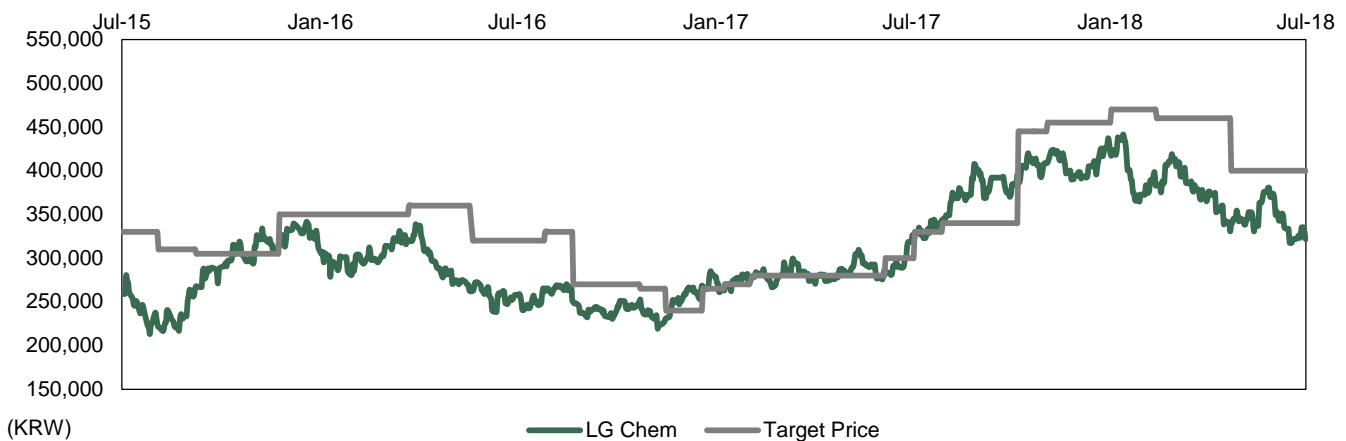
Lotte Chemical (011170 KS)



Date	Rating	Target price	Date	Rating	Target price	Date	Rating	Target price
17-Jul-15	Buy	350,000.00	20-Jul-16	Hold	300,000.00	23-Jun-17	Buy	450,000.00
20-Aug-15	Buy	325,000.00	12-Aug-16	Buy	380,000.00	15-Aug-17	Buy	500,000.00
24-Sep-15	Buy	320,000.00	08-Nov-16	Buy	390,000.00	20-Nov-17	Buy	510,000.00
15-Oct-15	Buy	315,000.00	02-Dec-16	Buy	400,000.00	18-Jan-18	Buy	540,000.00
10-Dec-15	Hold	250,000.00	05-Jan-17	Buy	435,000.00	01-Mar-18	Buy	560,000.00
04-Mar-16	Hold	340,000.00	17-Jan-17	Buy	450,000.00	09-May-18	Buy	500,000.00
08-Apr-16	Hold	355,000.00	25-Jan-17	Buy	460,000.00			
06-Jun-16	Hold	295,000.00	20-Feb-17	Buy	500,000.00			

Yong Liang Por started covering this stock from 17 Jan 2012
 Price and TP are in local currency
 Sources: FactSet; BNP Paribas

LG Chem (051910 KS)



Date	Rating	Target price	Date	Rating	Target price	Date	Rating	Target price
17-Jul-15	Buy	330,000.00	07-Sep-16	Hold	270,000.00	20-Jul-17	Hold	330,000.00
20-Aug-15	Buy	310,000.00	08-Nov-16	Hold	265,000.00	15-Aug-17	Hold	340,000.00
24-Sep-15	Buy	305,000.00	02-Dec-16	Hold	240,000.00	24-Oct-17	Buy	445,000.00
10-Dec-15	Buy	350,000.00	05-Jan-17	Hold	265,000.00	20-Nov-17	Buy	455,000.00
08-Apr-16	Buy	360,000.00	25-Jan-17	Hold	270,000.00	18-Jan-18	Buy	470,000.00
06-Jun-16	Buy	320,000.00	20-Feb-17	Hold	280,000.00	01-Mar-18	Buy	460,000.00
12-Aug-16	Buy	330,000.00	23-Jun-17	Hold	300,000.00	09-May-18	Buy	400,000.00

Yong Liang Por started covering this stock from 17 Jan 2012
 Price and TP are in local currency
 Sources: FactSet; BNP Paribas

Company	Ticker	Price	Rating	Valuation & Risks
Chandra Asri Petrochemical	TPIA IJ	IDR 5,075	Hold	Target price based from 2.5x EV/CE. We see the key upside and downside risks coming from better or worse-than-expected chemical demand
Formosa Chem & Fibre	1326 TT	TWD 112.50	Hold	Our TP is based on SoTP. Upside risk: Strengthening chemical demand. Downside risk: Falling crude prices.
Formosa Petro	6505 TT	TWD 118.50	Reduce	Our TP is based on 3.2x EV/CE. Upside risk: a strong recovery in oil product demand.
Formosa Plastics	1301 TT	TWD 107.00	Hold	Our TP is based on SoTP. Upside risks: strong chemical demand. Downside risks: hard landing in China.
LG Chem	051910 KS	KRW 321,500	Buy	TP is based on SOTP. Downside risk: EV battery demand or profitability fails to eventuate
Lotte Chemical	011170 KS	KRW 332,500	Buy	Target price based on 1.48x EV/CE. The key downside risk is weaker-than-expected chemical demand and plant mechanical failure
Nanya Plastics	1303 TT	TWD 84.10	Buy	Our TP is based on SoTP. Downside risk: worse-than-expected chemical demand and plant mechanical failure.

Sources: Factset, BNP Paribas

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BUY (B). The upside is 10% or more.

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Unless otherwise specified, these recommendations are set with a 12-month horizon. Thus, it is possible that future price volatility may cause a temporary mismatch between upside/downside for a stock based on market price and the formal recommendation.

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