BUY (Unchanged)

Change in Numbers

TP: Bt 52.00 (From: Bt 56.00)

Upside : 14.3%

21 DECEMBER 2022

PTT Global Chemical Pcl (PTTGC TB)

A valuation call

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We maintain our BUY call on PTTGC on valuation grounds, with the stock at 0.6x P/BV with a 4% dividend yield on much lower earnings forecasts. Also, we believe petrochemical spreads are already around their bottoms, though we still expect a weak cycle to persist.

Thanachart Securities

Looks cheap on earnings bottoming

We maintain our BUY call on PTTGC, with a new 2023F DCF-based TP of Bt52 (from Bt56), due to what we see as a cheap valuation and with earnings likely to bottom in 2023F. We find PTTGC is trading on 0.6x 2023F P/BV with 1.6/4.0% 2022-23F dividend yields after incorporating 30/27/26% norm earnings cuts for 2022-24F, which implies that we see PTTGC's norm earnings bottoming in 2023F. We forecast norm earnings growth of -25/-18/+21% in 2022-24F. As for bottom-line earnings, we forecast PTTGC to turn from a 2022F loss (from hedging activities) to a profit next year. On petrochemical spreads, though we expect the weak petrochemical cycle to continue, we believe current spreads are at or near rock-bottom levels, i.e. below cash cost and accounting breakeven of some higher-cost companies.

As low as spreads can get

Our earnings cuts are due to lower petrochemical spread assumptions. Although we still expect the industry cycle to be weak into next year, we believe current spread levels are at or near their bottoms. See Exhibits 4-5 for 10-17 year spread cycles for key products. For example, the current benchmark HDPE-naphtha spread of US$378/tonne is believed to be near its cash cost level, implying limited downside risk. A cut run is also happening in the industry, which should help prevent further spread downside. Once China's COVID wave post zero-COVID policy easing subsides in 2Q23F, we expect a recovery in petrochemical demand, which should help support spreads during the industry's downturn, where new capacity is still coming in.

Competitive cost structure

We believe PTTGC will withstand the industry downturn better than peers due to its more competitive cost structure. The company's petrochemical feedstock mix is 65% naphtha/LPG and 35% gas, which has much lower cost than naphtha. Also, we expect the mix of gas to rise to 40% in 2024-25F vs. 35% in 2022-23F. The higher proportion will be due to Erawan gas field's ramp-up in output capacity.

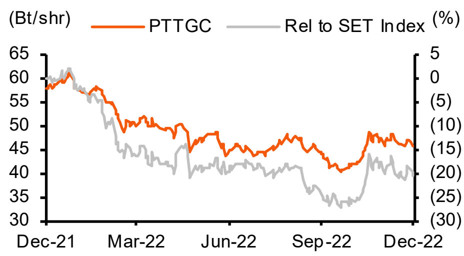
Market already has low expectations

We believe the market is already anticipating an extended weak chemical cycle into 2023F. The Bloomberg consensus estimate for PTTGC's 2023 profit is down by 31% YTD. PTTGC's share price is also the second-worst performer in the sector YTD, with its price down by 22%. We note the share price has been steady over the past 5 months despite margins having been consistently near breakeven level.

COMPANY VALUATION

Y/E Dec (Bt m)	2021A	2022F	2023F	2024F
Sales	465,128	749,884	633,371	588,327
Net profit	47,644	(8,528)	18,323	20,258
Consensus NP	—	6,419	20,828	25,177
Diff frm cons (%)	—	*na*	*(12.0)*	*(19.5)*
Norm profit	28,295	21,128	17,430	21,148
Prev. Norm profit	—	30,380	23,717	28,512
Chg frm prev (%)	—	*(30.5)*	*(26.5)*	*(25.8)*
Norm EPS (Bt)	6.3	4.7	3.9	4.7
Norm EPS grw (%)	270.7	(25.3)	(17.5)	21.3
Norm PE (x)	7.3	9.7	11.8	9.7
EV/EBITDA (x)	7.5	8.6	8.2	7.7
P/BV (x)	0.6	0.7	0.6	0.6
Div yield (%)	8.2	1.6	4.0	4.4
ROE (%)	9.4	6.8	5.6	6.5
Net D/E (%)	58.0	63.1	54.6	49.0

PRICE PERFORMANCE



COMPANY INFORMATION

Price *as of* 21-Dec-22 (Bt)	45.50
Market Cap (US$ m)	5,907.4
Listed Shares (m shares)	4,508.8
Free Float (%)	54.8
Avg Daily Turnover (US$ m)	15.6
12M Price H/L (Bt)	61.00/40.25
Sector	PETRO
Major Shareholder	PTT Pcl 45.18%

Sources: Bloomberg, Company data, Thanachart estimates

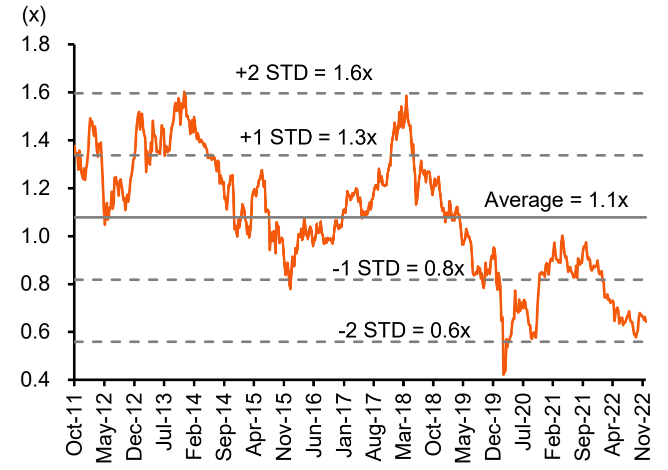
ESG Summary Report P9

Looks cheap on earnings bottoming

Attractive valuation despite substantial profit cut

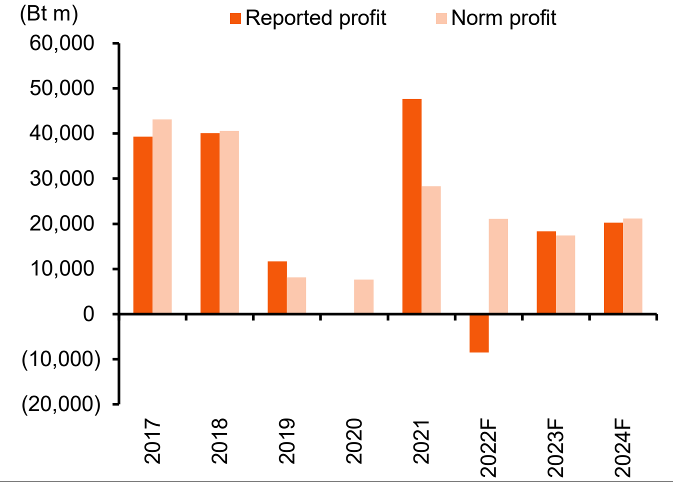
Despite its poor earnings outlook (the same as for all other chemical names), we continue to rate PTTGC as a BUY as we regard its valuation and dividend yield as attractive. We see limited scope for a further de-rating as the stock is trading at 0.6x 2023F P/BV with a 4% dividend yield. That is after our substantial norm earnings cuts for 2022-24F, which imply that PTTGC's norm earnings will likely bottom in 2023F. We now forecast norm earnings growth of -25/-18/+21% in 2022-24F. As for bottom-line earnings, we forecast PTTGC to turn from a 2022F loss (from hedging activities) to a profit next year.

Ex 1: P/BV At -2STD To Historical Profit



Sources: Bloomberg, Thanachart estimates

Ex 2: Profit Set To Bottom In 2023F



Sources: Company data, Thanachart estimates

Earning revisions

We now assume a chemical spread recovery in 2024F

We cut PTTGC's profit by 30/27/26% over 2022-24F as we cut our spread assumptions and postpone the spread recovery to in 2024F. This is to reflect the weaker global demand outlook and still substantial supply ahead. Our revised HDPE-naphtha assumptions are at US$400/430 per tonne for 2023-24F, still below the mid-cycle level of US$550. Also, we cut our Allnex EBITDA forecast by 24% to EUR300m to reflect weaker demand prospects. Similar to the chemical cycle, we foresee Allnex profit bottoming next year

Ex 3: Profit Revision And Assumptions Changes

	2019	2020	2021	2022F	2023F	2024F
Reported profit (Bt m)						
- New	11,682	200	47,644	(8,528)	18,323	20,258
- Old				16,042	21,865	27,648
- Change (%)				*(153.2)*	*(16.2)*	*(26.7)*
Norm profit (Bt m)						
- New	8,164	7,634	28,295	21,128	17,430	21,148
- Old				30,380	23,717	28,512
- Change (%)				*(30.5)*	*(26.5)*	*(25.8)*
New (US$/tonne)						
HDPE - Naphtha	466	514	541	400	400	430
LLDPE - Naphtha	421	488	560	421	430	460
LDPE - Naphtha	471	635	876	651	500	530
MEG-Naphtha	53	101	206	(73)	100	130
Px-condensate	351	229	275	276	260	280
BZ-condensate	97	195	291	194	150	200
Old (US$/tonne)						
HDPE - Naphtha				430	460	530
LLDPE - Naphtha				450	480	550
LDPE - Naphtha				700	730	800
MEG-Naphtha				(66)	100	170
Px-condensate				180	200	250
BZ-condensate				180	200	250
Change (%)						
HDPE - Naphtha				*(7.1)*	*(13.0)*	*(18.9)*
LLDPE - Naphtha				*(6.5)*	*(10.4)*	*(16.4)*
LDPE - Naphtha				*(7.0)*	*(31.5)*	*(33.8)*
MEG-Naphtha				*9.9*	*0.0*	*(23.5)*
Px-condensate				*53.3*	*30.0*	*12.0*
BZ-condensate				*8.0*	*(25.0)*	*(20.0)*

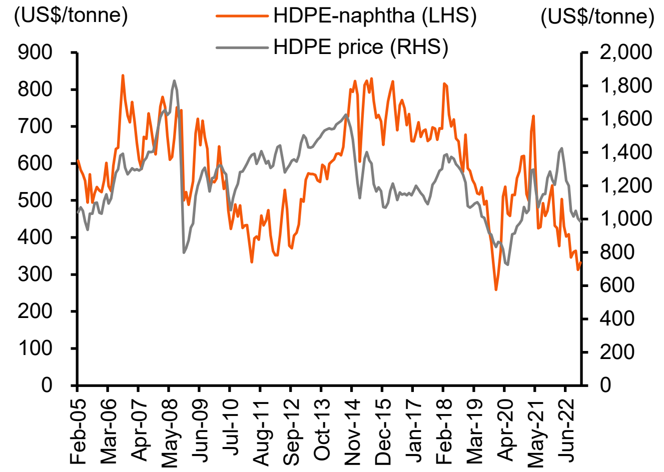
Sources: Company data, Thanachart estimates

Spreads as low as they can go

Below industry cash cost

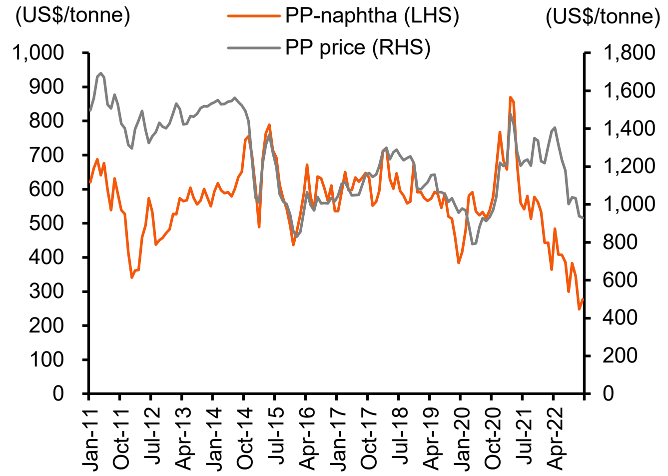
Although we still expect the weak industry cycle to persist into next year, we believe current spread levels are at or near their bottoms. See Exhibits 4-5 for 10-17 year spread cycle for key products. For example, the current benchmark HDPE-naphtha spread of US$378/tonne is believed to be near its cash cost level, implying limited downside risk. Coupled with weak demand due to China's zero-Covid policy, a cut run is happening in the industry, which should help prevent further spread downside. Also, we saw a weak profit trend among Thai chemical companies in 3Q22. SCC's (SCC TB, Bt331, SELL) chemical EBITDA already turned into a loss in 3Q22, while PTTGC's EBITDA was near breakeven. See Exhibit 6.

Ex 4: HDPE Price And Spread



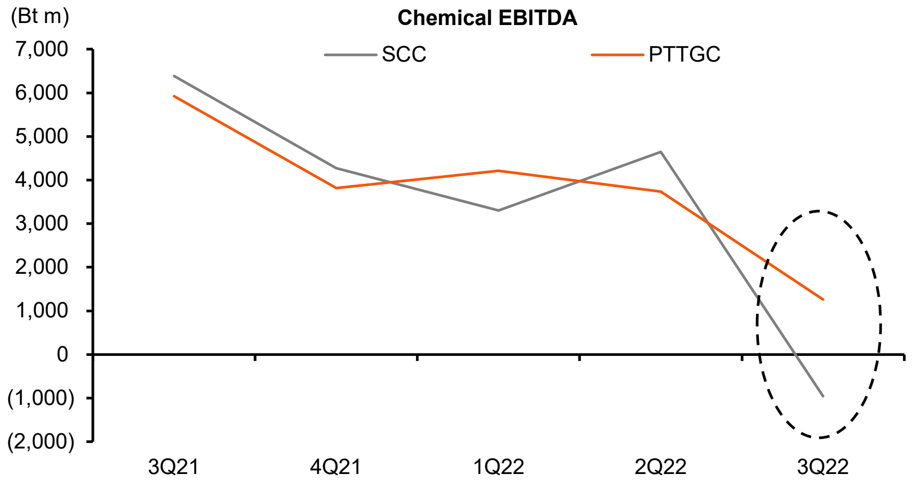
Source: Bloomberg

Ex 5: PP Price And Spread



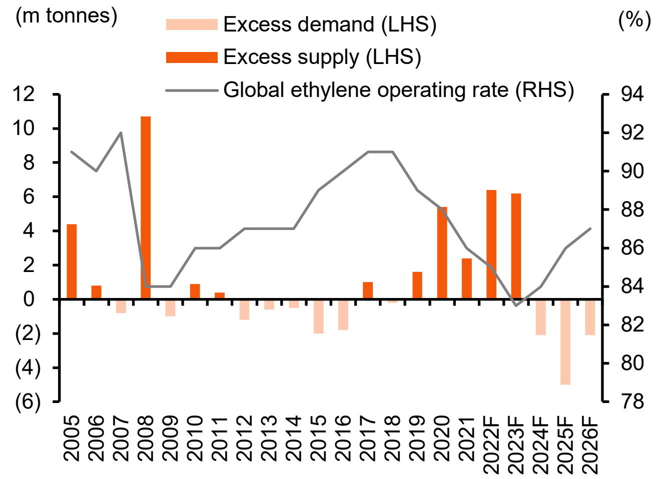
Source: Bloomberg

Ex 6: Thai Chemical Companies Making EBITDA Loss Or Near Breakeven Profit In 3Q22



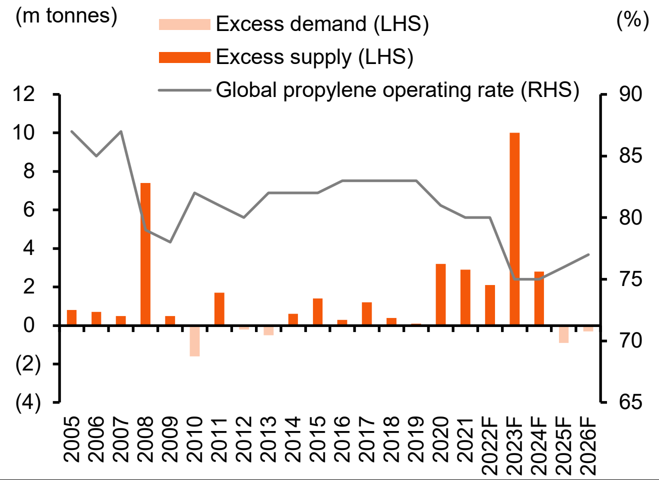
Source: Company data

Ex 7: Global Ethylene Recovery delay…



Sources: Company data, Thanachart estimates

Ex 8: …Similar to Propylene



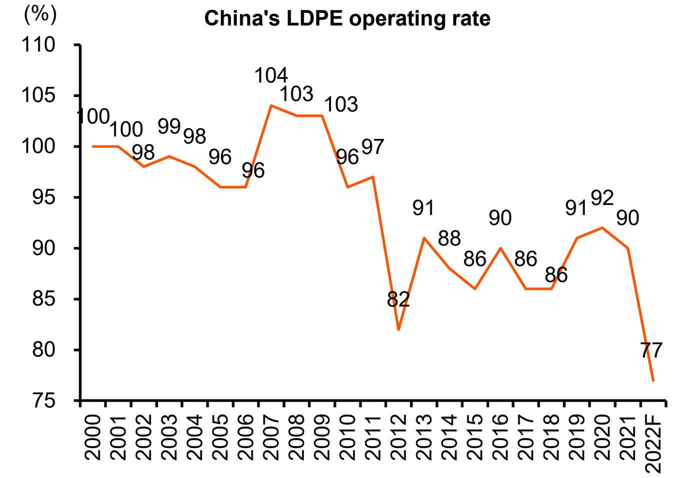
Sources: Company data, Thanachart estimates

China demand recovery

Impact on weak China demand has largely been reflect in this year

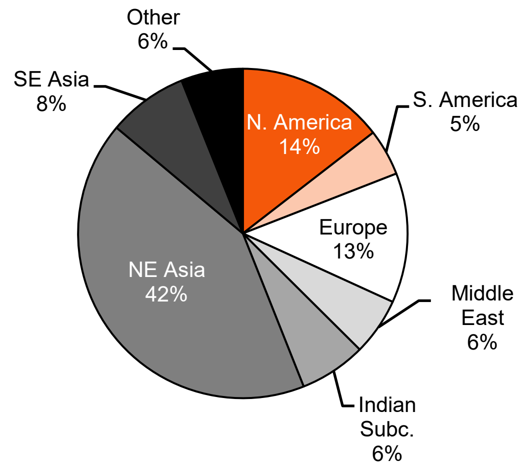
China is a major factor for the global and Thai petrochemical markets, accounting for around 40% of global petrochemical demand and c.5-20% of Thai company exports in 2021. We believe China's zero-Covid policy has already had a large impact in 2022F and a recovery in China demand would help offset weakness amid economic slowdowns in other regions. We see believe such a development would help support spreads during the industry's downturn, where new capacity is still coming.

Ex 9: China's LDPE Operating Rate



Sources: ICIS

Ex 10: Global Polyethylene Demand – 2021



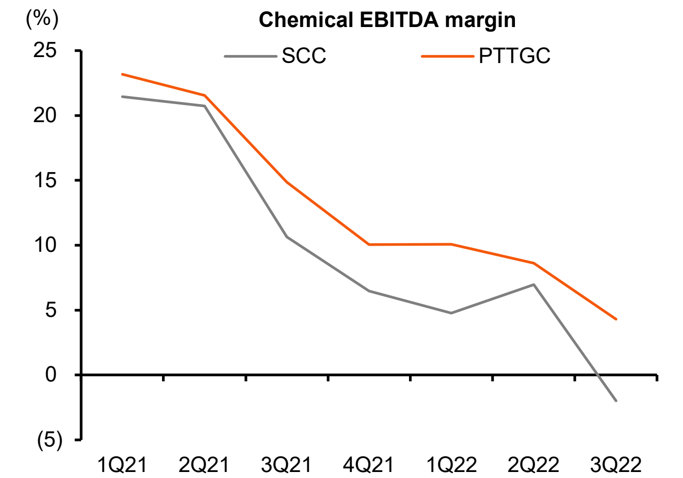
Sources: IHS

Competitive cost structure

PTTGC uses gas for 35% of its feedstock

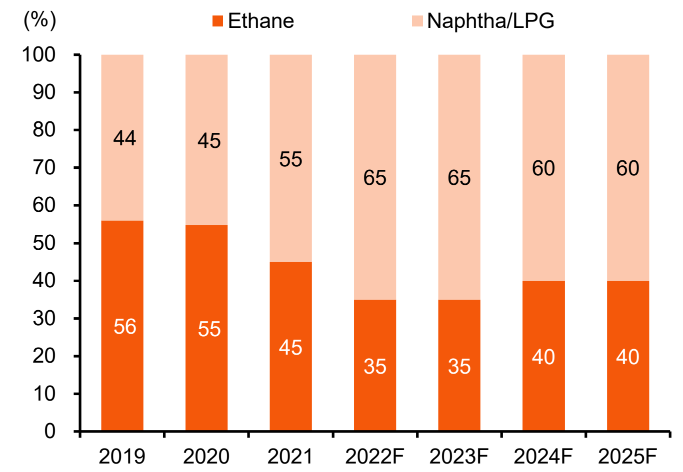
PTTGC should withstand the industry downturn better than peers due to its more competitive cost structure, in our view. The company's petrochemical feedstock mix is 65% naphtha/LPG and 35% gas, which has much lower cost than naphtha. We expect PTTGC's gas feedstock to improve as PTT Exploration & Production (PTTEP TB, Bt166.50, HOLD), ramps up the Erawan gas field's output. We also expect the mix of gas to rise to 40% in 2024-25F vs. 35% in 2022-23F.

Ex 11: PTTGC's EBITDA Margin Vs. SCC



Source: Company data

Ex 12: PTTGC's Feedstock Mix



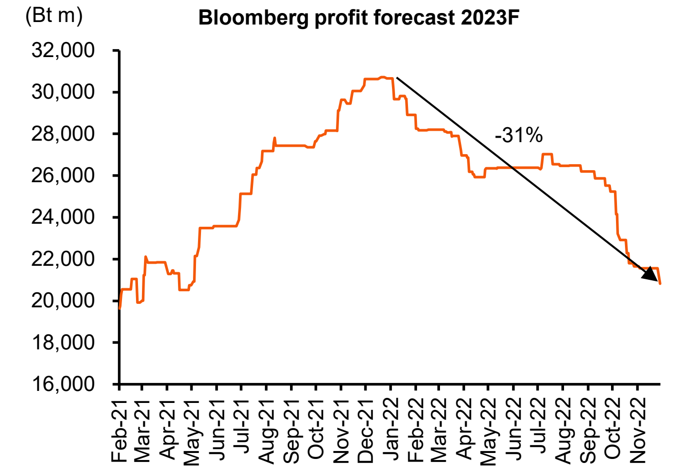
Sources: Company data, Thanachart estimates

Market already has low expectations

PTTGC share price has been steady despite spreads being near breakeven

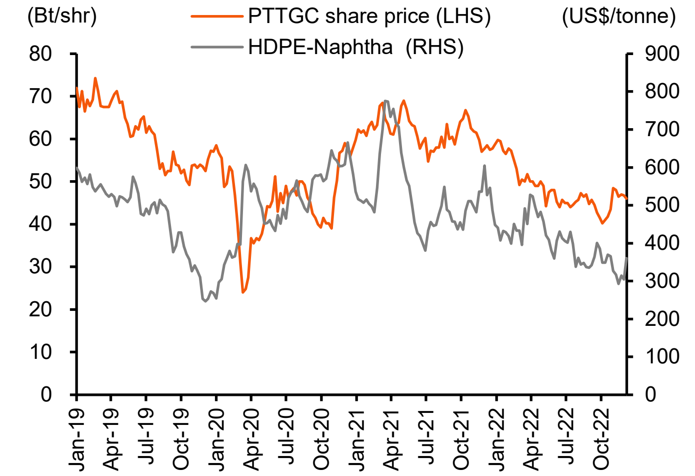
We believe the market is already anticipating an extended weak chemical cycle into 2023F. The Bloomberg consensus estimate for PTTGC's 2023 profit is down by 31% YTD. PTTGC's share price is also the second-worst performer in the sector YTD, with its price dropping by 22%. We believe PTTGC's share price has been hit by its extremely weak 2022F profit outlook. We note that the share price has been steady over the past 5 months despite the margin having been consistently near breakeven level.

Ex 13: Bloomberg Earnings Revision



Source: Bloomberg

Ex 14: PTTGC's Share Price Vs. HDPE Spread



Source: Bloomberg

Ex 15: 12-month DCF-based TP Calculation, Using A Base Year Of 2023F

(Bt m)	2023F	2024F	2025F	2026F	2018F	2028F	2029F	2030F	2031F	2032F	2033F	Terminal Value
EBITDA & equity income	47,219	48,454	47,216	54,495	52,439	52,450	52,641	53,842	54,244	54,028	52,302	
Free cash flow	33,711	34,511	32,180	35,240	34,413	41,070	41,311	42,136	42,533	42,289	41,088	586,966
PV of free cash flow	28,791	27,229	23,067	23,243	20,885	22,929	21,221	19,916	17,733	16,151	14,378	205,398

Risk-free rate (%)	2.5
Market risk premium (%)	8.0
Beta	1.2
WACC (%)	8.2
Terminal growth (%)	2.0
Enterprise value - add investments	440,940
Net debt (end-2022F)	197,513
Minority interest	10,277
Equity value	233,151
# of shares (m)	4,509
Equity value/share (Bt)	**52**

Source: Thanachart estimates

Valuation Comparison

Ex 16: Comparison With Regional Peers

Name	BBG code	Country	EPS growth 22F (%)	EPS growth 23F (%)	PE 22F (x)	PE 23F (x)	P/BV 22F (x)	P/BV 23F (x)	EV/EBITDA 22F (x)	EV/EBITDA 23F (x)	Div yield 22F (%)	Div yield 23F (%)
Sinopec Shanghai	338 HK	Hong Kong	(120.9)	na	na	9.6	0.5	0.5	67.7	6.7	3.4	6.3
Sinopec Yizheng	1033 HK	Hong Kong	(53.3)	35.7	36.4	26.8	1.1	1.0	9.0	8.5	0.0	0.0
AKR Corporindo	AKRA IJ	Indonesia	92.0	5.7	13.4	12.7	2.6	2.4	9.8	9.2	2.8	3.6
Reliance Industries Ltd	RIL IN	India	31.2	22.1	28.4	23.3	2.2	2.0	18.5	14.3	0.3	0.4
LG Chem	051910 KS	South Korea	(36.1)	21.4	18.9	15.6	1.6	1.4	8.2	6.8	1.6	1.8
SK Energy	096770 KS	South Korea	na	(24.3)	5.7	7.5	0.7	0.7	4.4	5.6	2.3	2.1
Petronas Chemicals Group	PCHEM MK	Malaysia	14.7	(11.2)	8.6	9.7	1.7	1.6	5.3	5.7	6.4	5.5
Formosa Chemical	1326 TT	Taiwan	(54.3)	2.9	21.9	21.3	1.2	1.1	19.4	17.1	3.3	3.5
Far Eastern New Century	1402 TT	Taiwan	(7.2)	6.3	15.5	14.6	0.8	0.7	10.9	10.4	5.4	6.1
IRPC Pcl *	IRPC TB *	Thailand	(70.7)	489.1	51.7	8.8	0.6	0.6	11.7	6.7	5.2	5.7
Indorama Ventures *	IVL TB *	Thailand	93.0	(26.6)	5.6	7.7	1.1	1.0	5.2	5.9	5.1	3.8
PTT Global Chemical *	PTTGC TB *	Thailand	(25.3)	(17.5)	9.7	11.8	0.7	0.6	8.6	8.2	1.6	4.0
Siam Cement *	SCC TB *	Thailand	(37.1)	(2.0)	13.5	13.7	1.1	1.0	13.0	11.2	3.7	3.6
TPI Polene	TPIPL TB	Thailand	39.6	(25.7)	4.8	6.5	0.7	0.6	8.1	9.2	5.5	5.2
Average			**(10.3)**	**36.6**	**18.0**	**13.5**	**1.2**	**1.1**	**14.3**	**9.0**	**3.3**	**3.7**

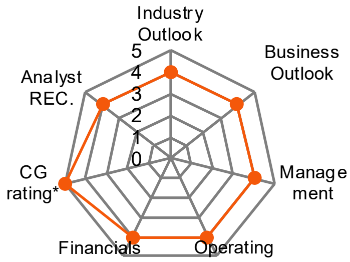
Sources: Bloomberg, * Thanachart estimates
Based on 21 December 2022 closing prices

COMPANY DESCRIPTION

PTT Global Chemical (PTTGC) became a fully integrated petrochemical and refining company after the amalgamation of PTTCH (PTT Chemicals) and PTTAR (PTT Aromatics & Refining) in late 2011. The company produces olefins and derivatives, and its key products are ethylene, propylene, HDPE, LDPE, LLDPE and MEG. Together, the olefin value chain made up about half of 2022 EBITDA. PTTGC is one of the few gas-based crackers in Asia and it has a competitive cost structure compared with other naphtha-based crackers. The company also has fully integrated refinery and aromatics plants which produce mainly paraxylene and benzene. The company also recently moved into the specialty coating business with its investment in Allnex Holdings GmbH (Allnex).

Source: Thanachart

COMPANY RATING



Rating Scale	
Excellent	5
Good	4
Fair	3
Weak	2
Very Weak	1
None	0

Source: Thanachart; *CG Rating

THANACHART'S SWOT ANALYSIS

S — Strength

- It is a low-cost producer that is leveraging its gas-based and flexible cracker.
- Large economies of scale due to synergies from its fully integrated facilities.
- Being a PTT group company helps ensure feedstock and raises its franchise value.

W — Weakness

- Cyclical business with volatile earnings and cash flow.
- Potential impact of stock losses (due mainly to oil price movements) on earnings.
- Reliance on bulk chemicals and limited exposure to specialty chemicals.

O — Opportunity

- Significant growth potential in terms of chemical demand in the region.
- Value enhancement from synergies, debottlenecking of its units, and further downstream integration.
- M&A activity that could lead to higher returns to investors.

T — Threat

- Depleting low-cost domestic gas supply would reduce its competitive edge of being a low-cost producer.
- Low oil prices erode its competitive advantage.
- Increasing competition from low-cost producers in the Middle East and US-based crackers.
- Overpaying for acquisitions and limited synergies.

CONSENSUS COMPARISON

	Consensus	Thanachart	Diff
Target price (Bt)	51.90	52.00	0%
Net profit 22F (Bt m)	6,419	(8,528)	na
Net profit 23F (Bt m)	20,828	18,323	-12%
Consensus REC	**BUY: 10**	**HOLD: 11**	**SELL: 4**

HOW ARE WE DIFFERENT FROM THE STREET?

- Our 2023F net profit is lower than the consensus likely due to our weaker chemical margin assumptions.
- However, our DCF-based target price is in-line with Bloomberg consensus.

Sources: Bloomberg consensus, Thanachart estimates

RISKS TO OUR INVESTMENT CASE

- Lower-than-expected oil prices and/or chemical spreads would be the key downside risk to our call.
- Hiccups in the gas supply from its parent company PTT or any unplanned outages at the complex would be another downside risk.

Source: Thanachart

PTTGC

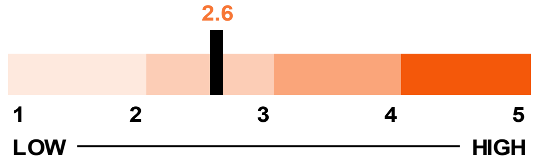
PTT Global Chemical Pcl

Sector: Resources | Energy & Utilities

ESG & Sustainability Report

PTTGC is a large-scale olefins cracker with 35-45% of olefins intake running on ethane gas and 55-65% on naphtha/LPG. It also has 145kbd of oil refinery capacity. Our ESG score for PTTGC is 2.6, at the low end among our coverage. The firm has clear intentions and targets to cut carbon emissions, but its score is dragged down by its high energy intensity and an information disclosure level that could be improved.

Thanachart ESG Rating



	SETTHSI Index	THSI Index	DJSI Index	MSCI (CCC-AAA)	Arabesque S-Ray (0-100)	Refinitiv (0-100)	S&P Global (0-100)	Moody's (0-100)	CG Rating (0-5)
PTTGC	YES	YES	YES	BBB	55.16	77.44	87.53	49.0	5.0

Sources: SETTRADE, SETTHSI Index, Thailand Sustainability Investment (THSI), The Dow Jones Industrial Average (DJSI), MSCI ESG Research LLC, Arabesque S-Ray®, Refinitiv ESG Information, S&P Global Market Intelligence, Moody's ESG Solutions, Thai IOD (CG rating)
Note: Please see third party on "terms of use" toward the back of this report.

Factors	Our Comments
ENVIRONMENT – **Environmental Policies & Guidelines** – **Energy Management** – **Carbon Management** – **Water Management** – **Waste Management**	▪ PTTGC released 8.2mt of CO2 equivalent in 2021, up 18% from its 2018 level. Its carbon emission intensity also increased by 15% to 370kg/BOE (barrels of oil equivalent) of CO2. We believe the increases were due to falling gas and higher naphtha feedstock use in its petrochemical production. However, PTTGC emitted less carbon than the average of 476kg/BOE of CO2 for the Thai petrochemical industry, which mainly uses naphtha. ▪ PTTGC aims for its greenhouse gas (GHG) emissions to peak in 2025. It has a target to cut GHG emissions by 20% from the 2020 level within 2030F. However, we believe this is still pending the final investment decision on the US shale gas cracker project, which is under feasibility studies. PTTGC has an interest in recycling projects. ▪ The company also has an interest in carbon capture and storage (CCS) investment which we expect to be a collaboration among the PTT group given the high investment costs.
SOCIAL – **Human Rights** – **Staff Management** – **Health & Safety** – **Product Safety & Quality** – **Social Responsibility**	▪ PTTGC encourages a culture of safety with a total recordable injury rate (TRIR) of employees and contractors of only 0.41 and 1.04 cases per 1m man hours, respectively. ▪ PTTGC's staff turnover rate was low at 3.8% in 2021. It invested Bt135m in 2021 on staff training that led to 31.76 training hours/person/year. It also focus on the well-being of employees such as implementation of its Work From Home (WFH) policy as a normal working fashion, providing insurance for employees and families, and offering an Employee Assistance Program (EAP) to boost the quality of life and help counsel employees with personal issues. ▪ PTTGC in 2021 received a high satisfaction rate of over 90% from customers, suppliers and employees as well as communities. The company launched several projects to help society during the COVID-19 period.
GOVERNANCE & SUSTAINABILITY – **Board** – **Ethics & Transparency** – **Business Sustainability** – **Risk Management** – **Innovation**	▪ PTTGC has a 15-member board of directors (BOD) with nine being independent directors with a 2.5-year average tenure. Mr. Piyasvasti Amranand, a former energy minister, is the BOD chairman. ▪ There are many related-party transactions with its parent company, PTT. Gas (ethane and propane) feedstock is supplied by PTT. Pricing is on a net-back or equal-IRR basis with PTT's gas separation plant business. ▪ We see room for improvement in more timely information disclosure, such as the performance of its US$4.75bn Allnex acquisition and about past supply outages. ▪ We see two areas of balance sheet risk. The first is a potential asset impairment from the high investment cost of Allnex. Another risk is a potential debt increase if PTTGC decides to invest in a US ethane cracker which would require substantial investment.

Sources: Company data, Thanachart

We expect 2023F core profit to mark the trough

Balance sheet has grown following a major acquisition

INCOME STATEMENT

FY ending Dec (Bt m)	2020A	2021A	2022F	2023F	2024F
Sales	329,291	465,128	749,884	633,371	588,327
Cost of sales	308,527	416,647	696,051	585,254	538,317
Gross profit	**20,764**	**48,481**	**53,833**	**48,118**	**50,010**
% gross margin	6.3%	10.4%	7.2%	7.6%	8.5%
Selling & administration expenses	14,881	18,878	31,642	26,726	24,825
Operating profit	**5,883**	**29,603**	**22,191**	**21,392**	**25,185**
% operating margin	1.8%	6.4%	3.0%	3.4%	4.3%
Depreciation & amortization	20,292	23,092	24,777	25,827	23,269
EBITDA	**26,174**	**52,695**	**46,968**	**47,219**	**48,454**
% EBITDA margin	7.9%	11.3%	6.3%	7.5%	8.2%
Non-operating income	2,283	4,931	6,087	6,087	6,087
Non-operating expenses	0	0	0	0	0
Interest expense	(3,511)	(5,434)	(10,272)	(10,354)	(9,858)
Pre-tax profit	**4,654**	**29,100**	**18,007**	**17,125**	**21,414**
Income tax	(109)	7,229	(315)	4,504	5,131
After-tax profit	**4,763**	**21,871**	**18,321**	**12,620**	**16,283**
% net margin	1.4%	4.7%	2.4%	2.0%	2.8%
Shares in affiliates' Earnings	3,323	6,992	3,722	5,583	5,583
Minority interests	(452)	(568)	(915)	(773)	(718)
Extraordinary items	(7,434)	19,349	(29,656)	893	(890)
NET PROFIT	**200**	**47,644**	**(8,528)**	**18,323**	**20,258**
Normalized profit	**7,634**	**28,295**	**21,128**	**17,430**	**21,148**
EPS (Bt)	0.0	10.6	(1.9)	4.1	4.5
Normalized EPS (Bt)	1.7	6.3	4.7	3.9	4.7

BALANCE SHEET

FY ending Dec (Bt m)	2020A	2021A	2022F	2023F	2024F
ASSETS:					
Current assets:	129,911	207,244	287,202	253,011	244,106
Cash & cash equivalent	60,658	74,994	70,000	70,000	75,000
Account receivables	29,277	50,540	81,482	68,822	63,927
Inventories	33,445	69,725	116,482	97,940	90,086
Others	6,531	11,985	19,238	16,249	15,093
Investments & loans	65,675	74,706	74,706	74,706	74,706
Net fixed assets	269,177	289,579	284,900	285,641	281,237
Other assets	24,620	182,585	182,585	182,585	182,585
Total assets	**489,383**	**754,115**	**829,393**	**795,944**	**782,635**
LIABILITIES:					
Current liabilities:	59,041	147,007	205,107	243,824	150,166
Account payables	20,114	69,951	116,860	98,258	90,378
Bank overdraft & ST loans	19	2,423	0	0	0
Current LT debt	22,017	37,835	40,000	100,000	20,000
Others current liabilities	16,892	36,797	48,248	45,566	39,788
Total LT debt	**126,261**	**224,760**	**227,513**	**150,207**	**222,717**
Others LT liabilities	15,086	54,746	83,546	72,021	67,566
Total liabilities	**200,389**	**426,512**	**516,166**	**466,052**	**440,448**
Minority interest	7,979	9,361	10,277	11,050	11,768
Preferreds shares	0	0	0	0	0
Paid-up capital	45,088	45,088	45,088	45,088	45,088
Share premium	36,937	36,937	36,937	36,937	36,937
Warrants	0	0	0	0	0
Surplus	(3,618)	5,235	5,235	5,235	5,235
Retained earnings	**202,608**	**230,982**	**215,691**	**231,582**	**243,159**
Shareholders' equity	281,015	318,242	302,951	318,842	330,419
Liabilities & equity	**489,383**	**754,115**	**829,393**	**795,944**	**782,635**

Sources: Company data, Thanachart estimates

Given a lack of capacity expansion, we expect positive FCF over the next three years

CASH FLOW STATEMENT

FY ending Dec (Bt m)	2020A	2021A	2022F	2023F	2024F
Earnings before tax	4,654	29,100	18,007	17,125	21,414
Tax paid	203	(5,976)	278	(4,331)	(5,429)
Depreciation & amortization	20,292	23,092	24,777	25,827	23,269
Chg In working capital	2,322	(7,707)	(30,790)	12,600	4,869
Chg In other CA & CL / minorities	4,056	21,870	7,904	5,717	1,259
Cash flow from operations	**31,527**	**60,380**	**20,176**	**56,937**	**45,381**
Capex	(24,905)	(43,495)	(20,097)	(26,568)	(18,865)
Right of use	(7,039)	(3,373)	0	0	0
ST loans & investments	2,144	485	53	0	0
LT loans & investments	226	(9,032)	0	0	0
Adj for asset revaluation	0	0	0	0	0
Chg In other assets & liabilities	(3,192)	(92,170)	4,725	(10,632)	(5,345)
Cash flow from investments	**(32,766)**	**(147,585)**	**(15,319)**	**(37,200)**	**(24,210)**
Debt financing	41,352	111,958	(3,087)	(17,305)	(7,490)
Capital increase	0	0	0	0	0
Dividends paid	(5,024)	(14,080)	(6,763)	(2,432)	(8,681)
Warrants & other surplus	9	3,662	0	0	0
Cash flow from financing	**36,338**	**101,541**	**(9,850)**	**(19,737)**	**(16,171)**
Free cash flow	**6,622**	**16,885**	**79**	**30,369**	**26,516**

We believe PTTGC looks cheap on bottom earnings

VALUATION

FY ending Dec	2020A	2021A	2022F	2023F	2024F
Normalized PE (x)	26.9	7.3	9.7	11.8	9.7
Normalized PE - at target price (x)	30.7	8.3	11.1	13.5	11.1
PE (x)	1,027.8	4.3	na	11.2	10.1
PE - at target price (x)	1,174.6	4.9	na	12.8	11.6
EV/EBITDA (x)	11.2	7.5	8.6	8.2	7.7
EV/EBITDA - at target price (x)	12.3	8.1	9.2	8.8	8.3
P/BV (x)	0.7	0.6	0.7	0.6	0.6
P/BV - at target price (x)	0.8	0.7	0.8	0.7	0.7
P/CFO (x)	6.5	3.4	10.2	3.6	4.5
Price/sales (x)	0.6	0.4	0.3	0.3	0.3
Dividend yield (%)	2.2	8.2	1.6	4.0	4.4
FCF Yield (%)	3.2	8.2	0.0	14.8	12.9
(Bt)					
Normalized EPS	1.7	6.3	4.7	3.9	4.7
EPS	0.0	10.6	(1.9)	4.1	4.5
DPS	1.0	3.8	0.8	1.8	2.0
BV/share	62.3	70.6	67.2	70.7	73.3
CFO/share	7.0	13.4	4.5	12.6	10.1
FCF/share	1.5	3.7	0.0	6.7	5.9

Sources: Company data, Thanachart estimates

Net D/E remains relatively low

FINANCIAL RATIOS

FY ending Dec	2020A	2021A	2022F	2023F	2024F
Growth Rate					
Sales (%)	(20.2)	41.3	61.2	(15.5)	(7.1)
Net profit (%)	(98.3)	23,769.6	na	na	10.6
EPS (%)	(98.3)	23,769.6	na	na	10.6
Normalized profit (%)	(6.5)	270.7	(25.3)	(17.5)	21.3
Normalized EPS (%)	(6.5)	270.7	(25.3)	(17.5)	21.3
Dividend payout ratio (%)	2,258.9	35.5	39.7	45.0	45.0
Operating performance					
Gross margin (%)	6.3	10.4	7.2	7.6	8.5
Operating margin (%)	1.8	6.4	3.0	3.4	4.3
EBITDA margin (%)	7.9	11.3	6.3	7.5	8.2
Net margin (%)	1.4	4.7	2.4	2.0	2.8
D/E (incl. minor) (x)	0.5	0.8	0.9	0.8	0.7
Net D/E (incl. minor) (x)	0.3	0.6	0.6	0.5	0.5
Interest coverage - EBIT (x)	1.7	5.4	2.2	2.1	2.6
Interest coverage - EBITDA (x)	7.5	9.7	4.6	4.6	4.9
ROA - using norm profit (%)	1.6	4.6	2.7	2.1	2.7
ROE - using norm profit (%)	2.7	9.4	6.8	5.6	6.5
DuPont					
ROE - using after tax profit (%)	1.7	7.3	5.9	4.1	5.0
- asset turnover (x)	0.7	0.7	0.9	0.8	0.7
- operating margin (%)	2.5	7.4	3.8	4.3	5.3
- leverage (x)	1.7	2.1	2.5	2.6	2.4
- interest burden (%)	57.0	84.3	63.7	62.3	68.5
- tax burden (%)	102.3	75.2	101.7	73.7	76.0
WACC (%)	8.2	8.2	8.2	8.2	8.2
ROIC (%)	1.6	6.0	4.4	3.2	3.8
NOPAT (Bt m)	6,021	22,249	22,579	15,765	19,151
invested capital (Bt m)	368,653	508,266	500,463	499,049	498,136

Sources: Company data, Thanachart estimates

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> 25 to 50	Second Quartile	Scores within this range indicates satisfactory relative ESG performance and moderate degree of transparency in reporting material ESG data publicly.
> 50 to 75	Third Quartile	Scores within this range indicates good relative ESG performance and above average degree of transparency in reporting material ESG data publicly.
> 75 to 100	Fourth Quartile	Score within this range indicates excellent relative ESG performance and high degree of transparency in reporting material ESG data publicly.

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