

2 SEPTEMBER 2021

Thailand Refinery

ปัจจัยบวกสำคัญ: จากเฮอริเคนถึงเครื่องบิน

การฟื้นตัวของ Market GRM มีความชัดเจนมากยิ่งขึ้นในเดือน ก.ย. 2021

ปัจจุบันเรคาดว่า Market Gross Refining Margin (GRM) จะปรับตัวสูงขึ้นอย่างเห็นได้ชัดตั้งแต่เดือน ก.ย. 21 เป็นต้นไป โดยได้ปัจจัยผลักดันจากการรบกวนอุปทานในอ่าวเม็กซิโกของสหรัฐฯ ซึ่งน่าจะเกิดต่อเนื่องจากเดือน ก.ย. ไปจนถึงเดือน ธ.ค. 21 ในขณะที่อัตราค่าโรงแหวน้ำมันอากาศยานกับ Crude Price Margin มีแนวโน้มเพิ่มอย่างชัดเจนตั้งแต่เดือน ก.ย. 21 เป็นต้นไปจากความต้องการน้ำมันอากาศยานที่สูงขึ้นตามการกลับมาของการเดินทางทางอากาศระหว่างทวีปโดยเฉพาะอย่างยิ่งระหว่างอเมริกา ยุโรป และเอเชีย

การรบกวนอุปทาน การฟื้นตัวของความต้องการ และต้นทุนน้ำมันดิบที่ลดลงเป็นกุญแจสำคัญ

เราเชื่อว่าในทั้ง 6 โรงกลั่นของไทยที่เราทำการศึกษา SPRC, ESSO, และ TOP จะเป็นผู้ได้รับประโยชน์สำคัญจาก Market GRM ที่ปรับตัวดีขึ้น ซึ่งเรคาดว่าจะเริ่มตั้งแต่เดือน ก.ย. 21 เป็นต้นไปจาก 1) Crude Premium ที่คาดว่าจะลดลงของน้ำมันดิบชนิดเบาจากผู้ผลิตในตะวันออกกลาง ตะวันออกไกล อเมริกา และแอฟริกาตะวันตกจากจุดสูงสุดที่ USD3/bbl ลงเหลือ USD2/bbl; และ 2) อัตราค่าโรงแหวน้ำมันอากาศยานและ Diesel-Dubai ที่สูงขึ้น USD3-5/bbl จากการกลับมาของการเดินทางทางอากาศทั่วโลก โดยเฉพาะอย่างยิ่งเที่ยวบินนานาชาติ และความต้องการน้ำมันดีเซลที่สูงขึ้นเพื่อใช้เป็นเชื้อเพลิงทำความร้อนในฤดูหนาวที่กำลังจะมาถึง ซึ่งจะเริ่มในเดือน พ.ย. 21 ถึงมี.ค. 22 ในซีกโลกเหนือ

ความต้องการน้ำมันอากาศยานเพิ่มต่อเนื่อง

เราเชื่อว่าอุปทานเฮอริเคนที่กำลังจะมาถึงในสหรัฐฯ (ซึ่งอาจรบกวนอุปทาน) และระดับสินค้าปิโตรเลียมคงคลังในปัจจุบันก่อนการเปิดเศรษฐกิจในสหรัฐฯ และประเทศในยุโรปน่าจะช่วยให้อัตราค่าโรงแหวนน้ำมันอากาศยาน ดีเซล และเบนซินสูงขึ้น ซึ่งน่าจะช่วยเพิ่ม Market GRM ให้แก่โรงกลั่นไทย จากข้อมูลของ International Air Transport Association (IATA) ตัวเลขการจองการเดินทางทางอากาศระหว่างสหรัฐฯ และยุโรปได้ปรับตัวสูงขึ้นเป็นจำนวนมากมาตั้งแต่เดือน พ.ค. 21 โดยเฉพาะอย่างยิ่งสำหรับการจองในสหรัฐฯ เพื่อไปยุโรป ซึ่งได้เพิ่มขึ้นเท่าตัวภายในระยะเวลา 2 เดือนจนถึง 60% ของระดับก่อน Covid เราคิดว่าการเดินทางทางอากาศระหว่างทวีปจะเริ่มปรับตัวขึ้นอย่างแท้จริงใน 4Q21 จากการจองล่วงหน้าที่จะช่วยผลักดันความต้องการสำหรับน้ำมันอากาศยานเพื่อรองรับตัวเลขเที่ยวบินระยะยาวเพื่อข้ามมหาสมุทรแอตแลนติกที่เพิ่มสูงขึ้น ในความเห็นของเราความต้องการน้ำมันอากาศยานกำลังฟื้นตัวอย่างเห็นได้ชัด ซึ่งจะช่วยผลักดัน Jet-Crude Margin ตั้งแต่ 4Q21 เป็นต้นไป

TOP และ SPRC เป็นหุ้นเด่นของเรา

เราคิดว่าโรงกลั่นเป็นกลุ่มที่น่าสนใจที่สุดในแง่ของผลตอบแทนต่อความเสี่ยงที่มากกว่ากลุ่มปิโตรเคมีและผู้ผลิตน้ำและก๊าซ ดังนั้นโดยมีเหตุผลจาก 1) ระดับการประเมินมูลค่าที่ต่ำกว่า 1x ของค่า P/BV เมื่อเทียบกับผลตอบแทนต่อส่วนผู้ถือหุ้นที่คาดว่าจะปรับตัวดีขึ้น; และ 2) Market GRM ที่มีแนวโน้มปรับตัวขึ้นจากความต้องการน้ำมันอากาศยานและดีเซลที่สูงขึ้นและ Crude Premium ที่ลดลง ใน 6 โรงกลั่นไทยที่เราศึกษา เราเลือก SPRC และ TOP จากสัดส่วน EBITDA ที่อยู่ในระดับสูงเมื่อเทียบกับโรงกลั่นอื่น กล่าวคือ 100% สำหรับ SPRC และ 50% สำหรับ TOP



Suwat Sinsadok

suwat.sin@fssia.com
+66 2611 3558

Siriluck Pinthusoonthorn

siriluck.pin@fssia.com
+66 2611 3562

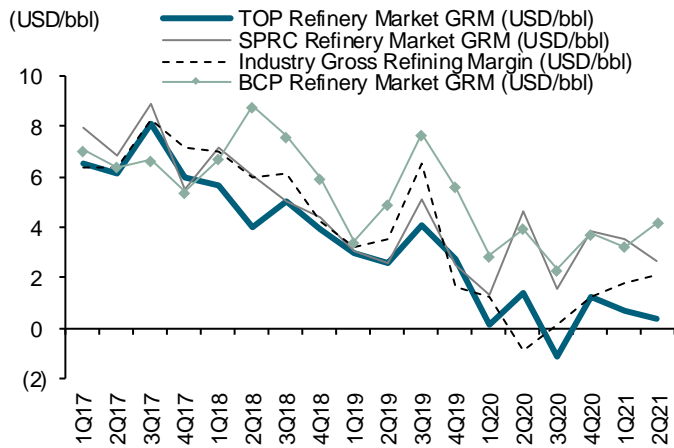
PREPARED BY FSS INTERNATIONAL INVESTMENT ADVISORY SECURITIES CO LTD (FSSIA). ANALYST CERTIFICATION AND IMPORTANT DISCLOSURES CAN BE FOUND AT THE END OF THIS REPORT

บทวิเคราะห์ฉบับนี้แปลมาจากบทวิเคราะห์ของ FSSIA ฉบับวันที่ 2 กันยายน 2021

Key catalysts: From hurricanes to jet planes

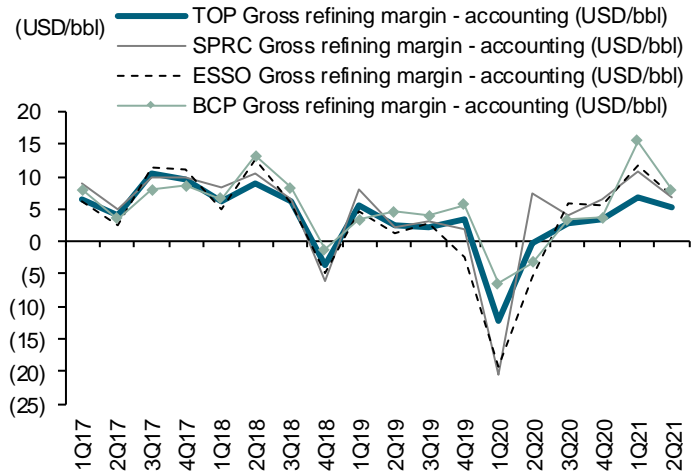
YTD, the market GRMs of Thai refiners have remained weak at under USD3/bbl due to the rising crude premiums and the poor product margins, particularly for the middle distillates, diesel and jet fuel, with their margins over Dubai crude oil price continuing to be under USD5/bbl for jet and USD7/bbl for diesel.

Exhibit 1: TOP, SPRC, BCP – market GRM



Source: Company data

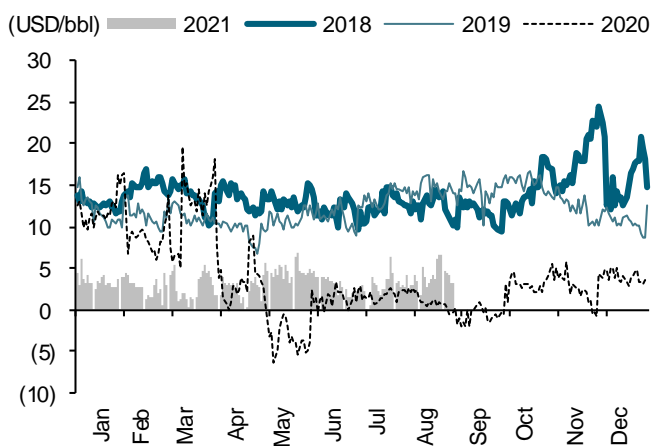
Exhibit 2: TOP, SPRC, ESSO, BCP – gross refining margin



Source: Company data

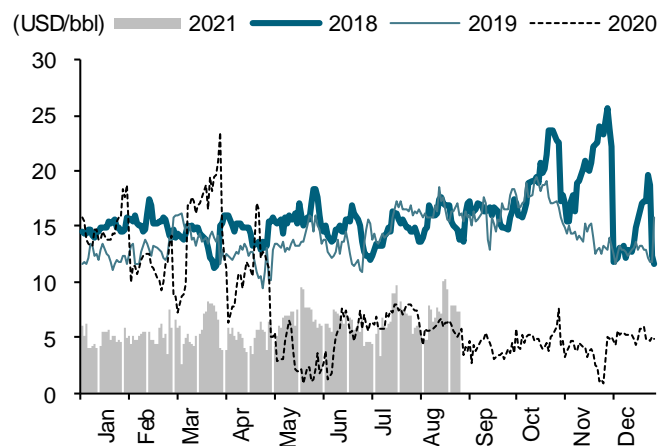
Jet demand is key for market GRM recovery in 4Q21 onward. The key culprit is the continually depressed demand for jet globally, given the resurgence of the Delta variant of the Covid-19 pandemic in 2H21 that has resulted in global lockdowns and prolonged bans on international air travel. Most refiners have not been able to cut their jet production yields to zero, which has effectively curbed their refinery utilisation rates and led to worsening net profits on top of the weak market GRMs.

Exhibit 3: Jet Kerosene fob Spot Price - Dubai crude oil price



Source: Bloomberg

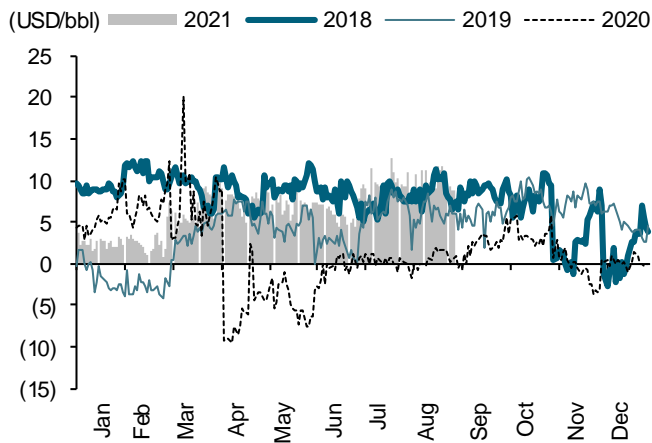
Exhibit 4: Gasoil 0.5% Sulphur fob SG Spot Price - Dubai crude oil price



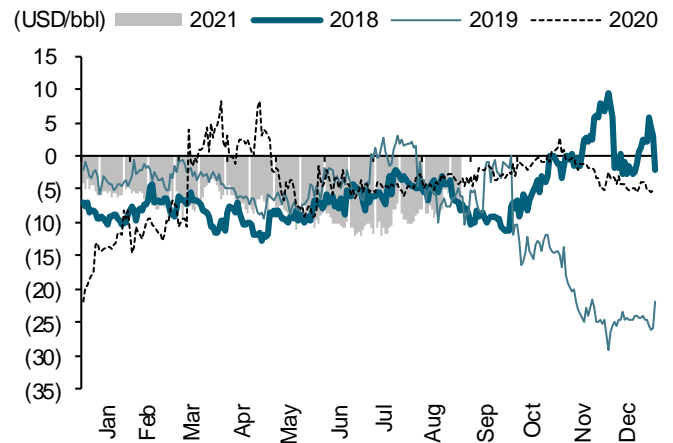
Source: Bloomberg

Gasoline is the only product that has seen its margin over Dubai crude price remain strong at over USD7/bbl in 2021, thanks to the higher land transportation requirements for private vehicles at the expense of lower air travel and public transportation.

Meanwhile, the demand for high sulphur fuel oil (HSFO) used mainly for global shipping has been weak due to the container shortage and the marine transportation disruptions as a result of the global lockdowns to fight the Covid-19 pandemic.

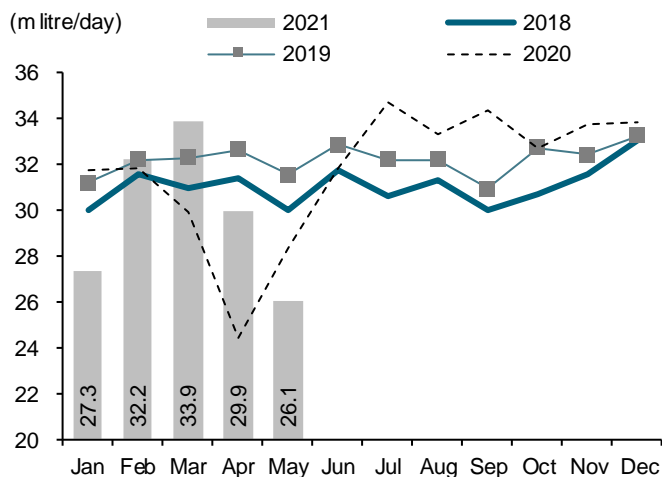
Exhibit 5: 92 Octane Gasoline fob Spot Price - Dubai crude oil price

Source: Bloomberg

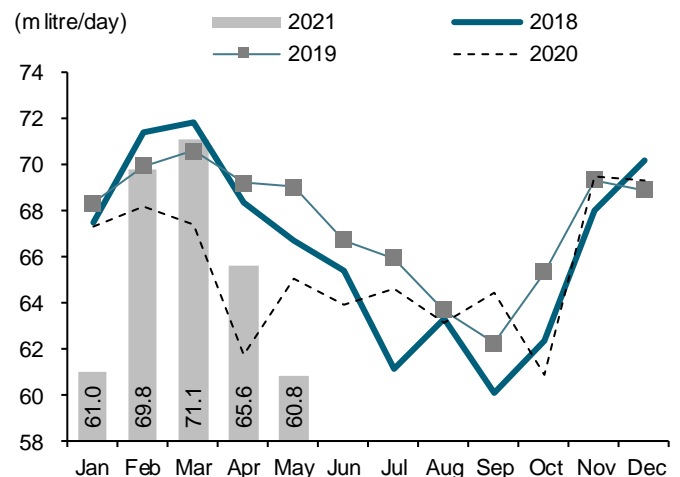
Exhibit 6: High-sulphur fuel oil Spot fob Singapore - Dubai crude oil price

Source: Bloomberg

Thailand's demand for refined oil declined in 2Q-3Q21 due to the renewed lockdowns. According to the Department of Energy Business (DOEB), the domestic demand for gasoline, diesel, and jet has plunged since 2Q21 due to the renewed lockdowns to fight the resurgence of Covid-19.

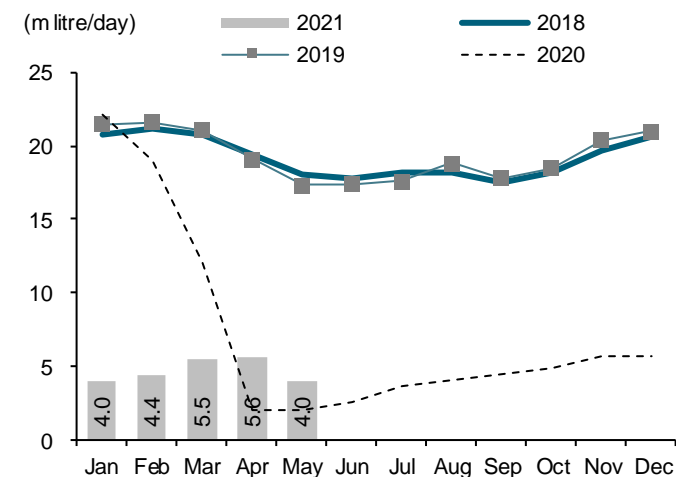
Exhibit 7: Gasoline consumption in Thailand

Source: DOEB

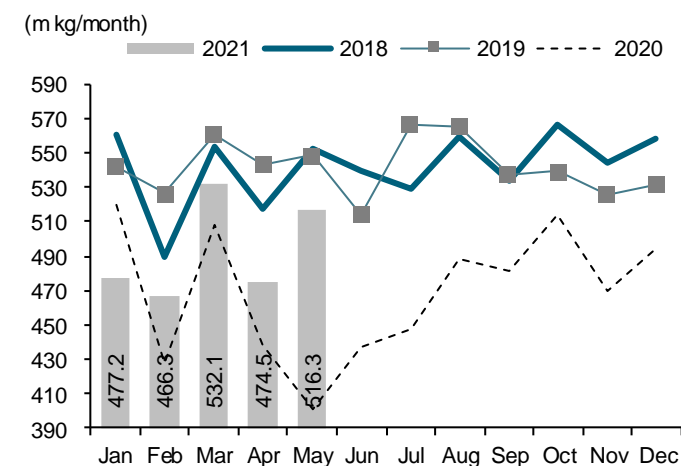
Exhibit 8: Diesel consumption in Thailand

Source: DOEB

As a result, the poor demand globally for jet and diesel, and the weak demand for refined oil in the domestic market, have all but eroded the market GRMs of Thai refiners, forcing them to remain below USD3/bbl vs the industry accounting cost of USD3.5-5/bbl, resulting in continued operating quarterly net losses or thin net profits for Thai refiners in 2020-1H21.

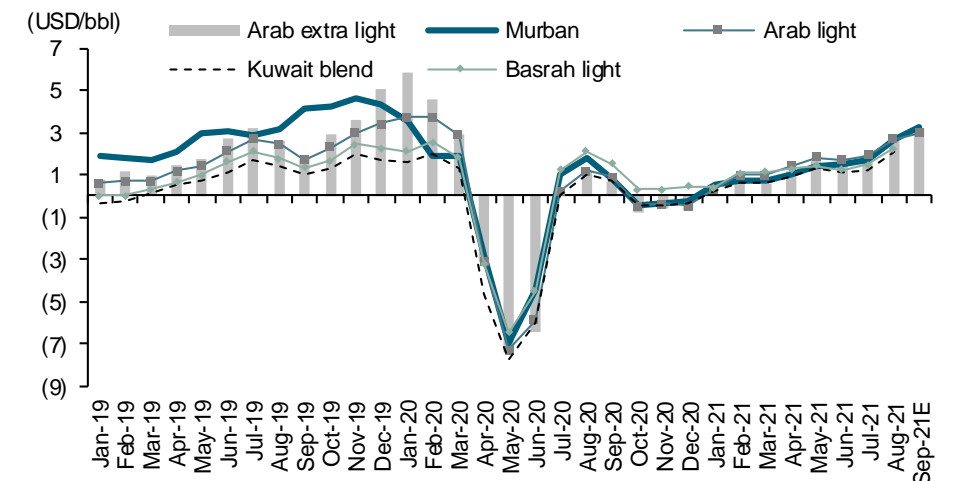
Exhibit 9: Jet fuel consumption in Thailand

Source: DOE B

Exhibit 10: LPG consumption in Thailand

Source: DOE B

In addition, the crude premiums for Thai refiners have continued to rise from negative territory in 4Q20 to the current USD3/bbl for most light crude oils, including Murban, Arab light, and Arab extra light, the three major crude types used by Thai refiners. The higher crude premiums have worsened the market GRMs for Thai refiners in the past six months to effectively offset the higher gasoline-Dubai margin.

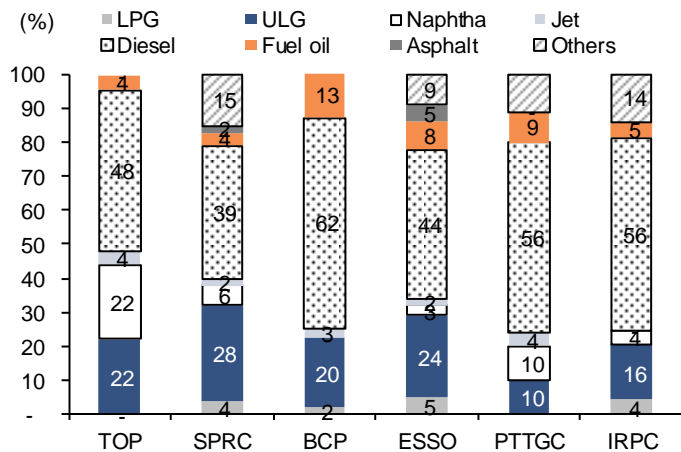
Exhibit 11: Crude premiums of Middle East producers

Source: TOP

We believe that among six Thai refiners under our coverage, SPRC, ESSO, and TOP will be the key beneficiaries of improving market GRMs that we project from Sep-21 onward, driven by:

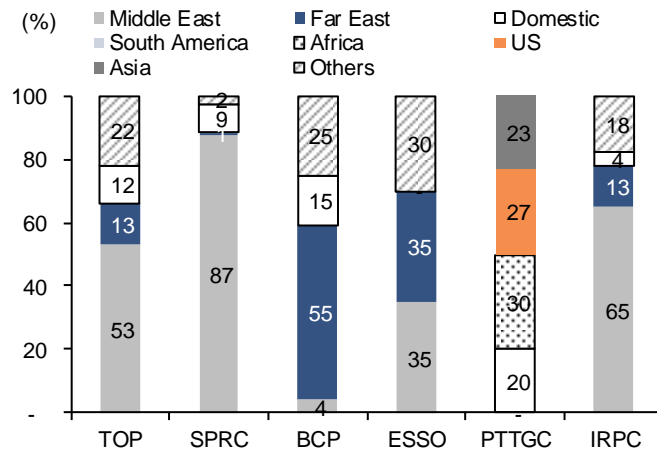
- 1) Lower crude premiums for the light crudes from Middle East, Far East, US, and West African producers, from the peak of USD3/bbl down to USD2/bbl, based on our estimate;
- 2) Higher margins of jet and diesel-Dubai by USD3-5/bbl as a result of the global resumption of air travel, particularly international flights, and the higher demand for diesel as a heating oil in the coming winter season beginning in Nov-21 to Mar-22 in the northern hemisphere.

Exhibit 12: Production yields of Thailand's refiners as of 2Q21



Source: Companies

Exhibit 13: Crude mix breakdown of Thailand's refiners as of 2Q21



Source: Companies

From hurricanes to jet plane demand to revitalise market GRMs

We believe the coming hurricane season in the Gulf of Mexico (GOM) that is expected to last until Dec-21, according to the US National Hurricane Center, could lead to supply disruptions for US upstream oil & gas and downstream refineries and petrochemical production in 3Q-4Q21. The US Gulf Coast area is a key region for US petroleum infrastructure, with over half of its 9.7m barrel per day (mbpd) refinery capacity.

Hurricane Ida is the first major hurricane to strike the US GOM in 2021. On 29 August, Hurricane Ida, which started as a ferocious Category 4 hurricane with wind speeds up to 150 miles per hour, landed on the US GOM, affecting the energy supply and demand, especially for transportation fuels and electricity. However, Hurricane Ida, 12 hours after coming ashore, weakened into a Category 1 hurricane after forcing a precautionary shutdown of GOM oil and refinery production. As of 30 Aug-21, nearly 1.74mbpd of oil production was suspended in advance of the storm.

Exhibit 14: US energy infrastructure with active storms and other hazards



Source: Energy Information Administration (EIA)

Exhibit 15: Mapping system and data series show energy infrastructure near Hurricane Ida



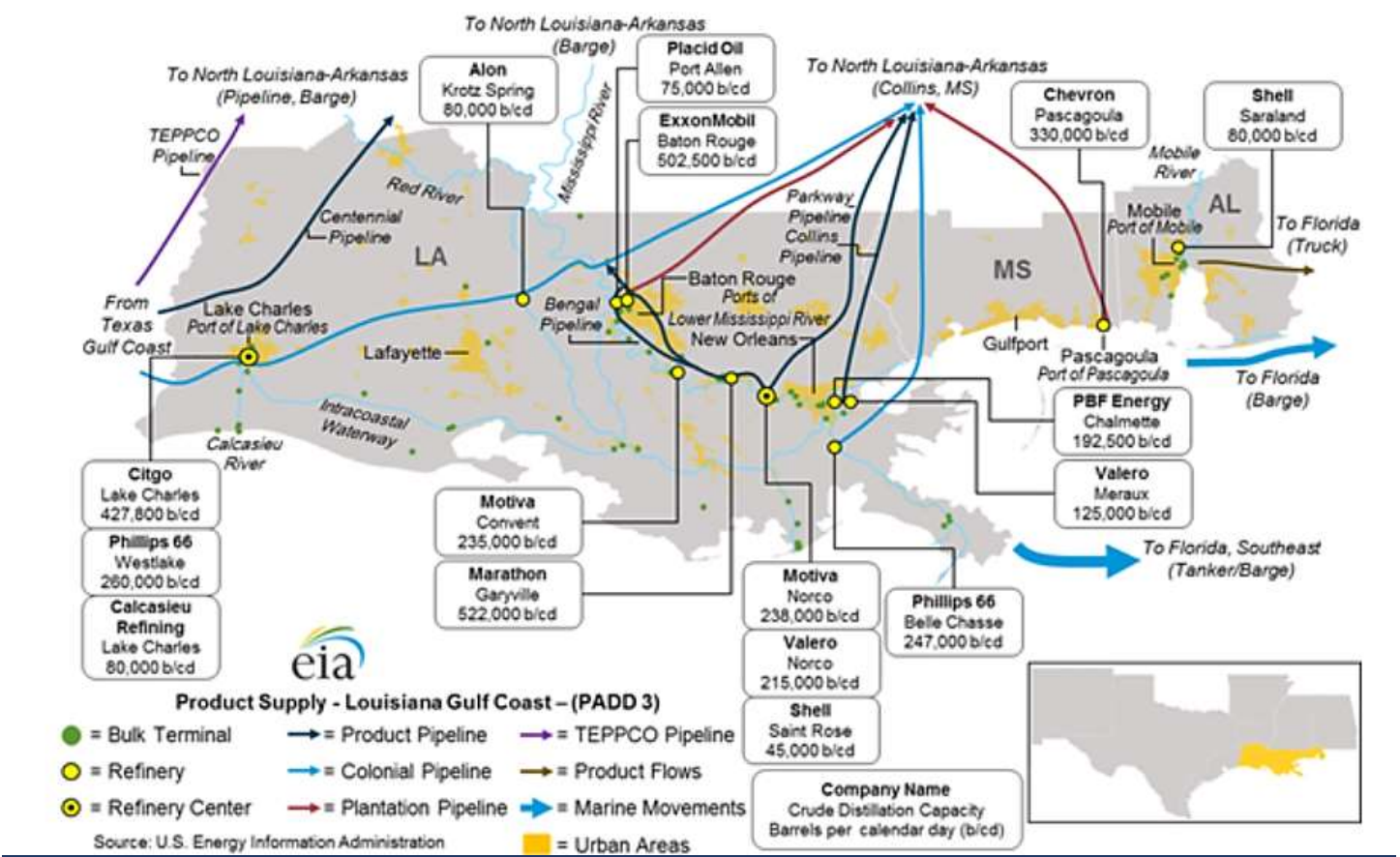
Source: EIA

2021 hurricane season with 7-10 hurricanes to hit GOM. The US federal government expects an active Atlantic hurricane season in 2021, with 7-10 hurricanes forming, according to an updated forecast released on 25 Aug-21. According to the National Oceanic and Atmospheric Administration (NOAA), up to 15-21 named storms could develop in the 2021 hurricane season, including tropical storms, which have wind speeds of around 39 miles per hour (mph) or higher.

Storms become hurricanes when winds reach 74mph. Of the predicted hurricanes, 3-5 could be major like Ida, with wind speeds of 111mph or higher. YTD, 5-6 named storms, including Hurricane Elsa and Ida have formed and hit the GOM and Florida, according to the NOAA.

According to the US Energy Information Agency (EIA), the US demand for transportation fuels, which includes gasoline, diesel, and jet fuel, will increase rapidly in the days ahead of the arrival of a hurricane in the affected area as consumers purchase fuel to prepare for evacuation.

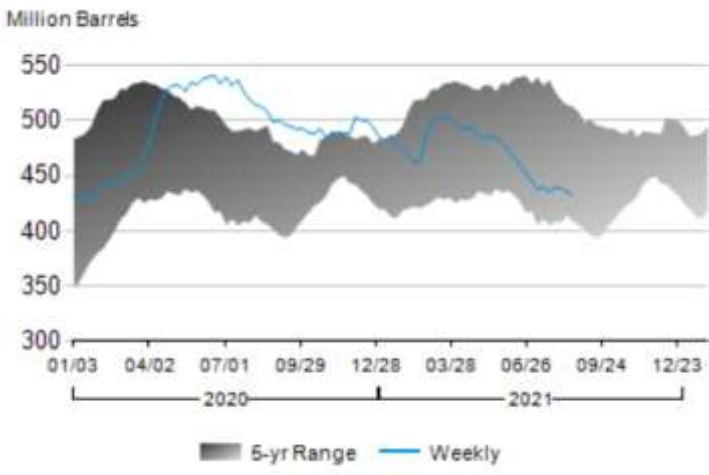
Exhibit 16: US energy infrastructure in the Gulf of Mexico



Source: EIA

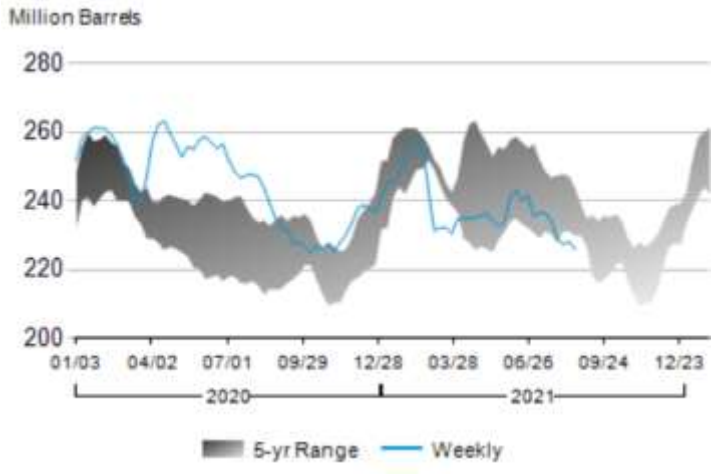
Low petroleum inventories could further pressure oil and refined oil product prices. According to the US weekly petroleum status report dated 20 Aug-21, the current levels of petroleum product inventories are far lower than their historical 5-year average, particularly for gasoline, which stands at lower than the 5-year average low band, while crude and diesel are closer to the lower bands.

Exhibit 17: US crude oil inventory



Source: EIA

Exhibit 18: US gasoline inventory

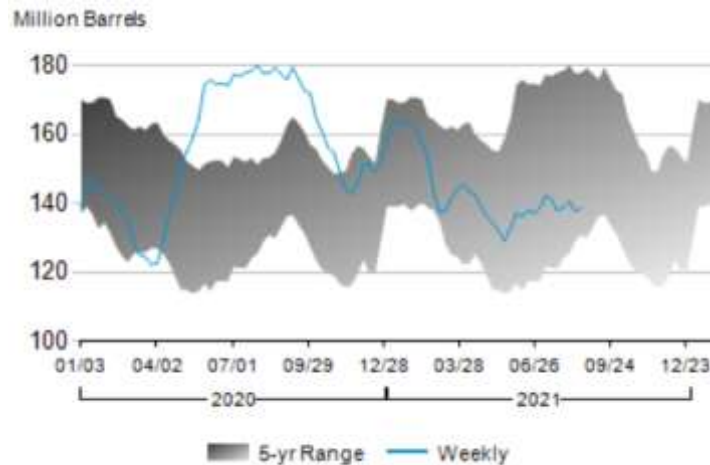


Source: EIA

Only the jet inventory level is higher than its 5-year average band, but the EIA believes that once intercontinental flights between the US and Europe begin in Sep-21, the jet fuel inventory should quickly drop due to the large consumption of jet fuel required for long-haul intercontinental flights.

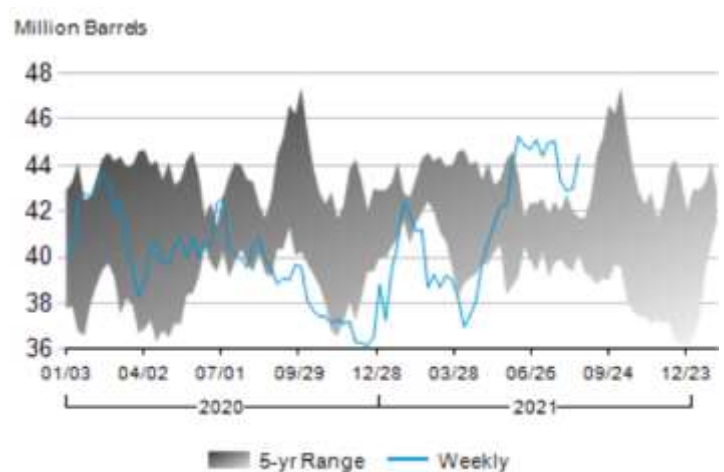
Hence, we believe that the upcoming hurricane season in the US (potential supply disruption) and the currently low inventory levels of petroleum products ahead of the economic reopenings in the US and European countries should lead to rising margins of jet fuel, diesel, and gasoline-crude, that in turn should boost the market GRMs for Thai refiners.

Exhibit 19: US diesel inventory



Source: EIA

Exhibit 20: US jet/kerosene inventory



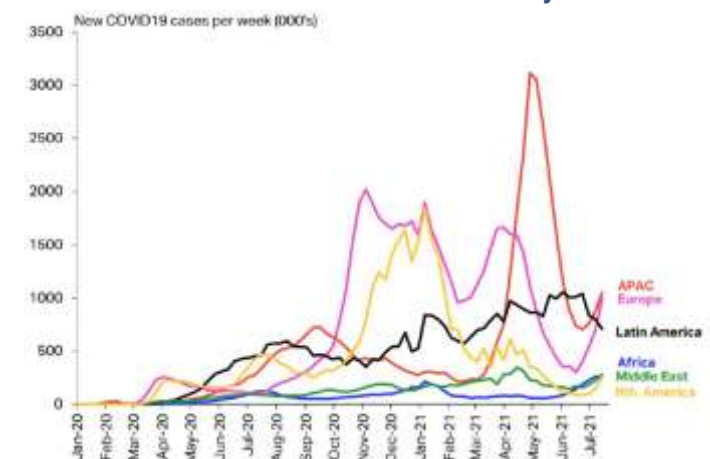
Source: EIA

Rising jet-crude margin is coming to town

On top of the potential supply disruptions in the US and the low inventory levels, we think the looming rise in the jet-crude margin is now closer than it has been in the past 20 months since 1Q20, when Covid-19 hit the global economy.

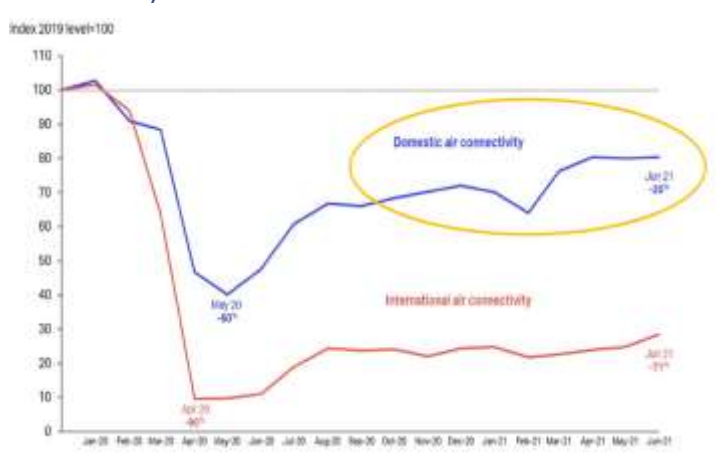
However, since Jan-21, the number of air flights for travel, measured by IATA's monthly air connectivity index, has continued to improve YTD, reaching 80% of the pre-Covid-19 level in 2019 for domestic flights thanks to the fast vaccination rates in developed countries, including the US, UK, China, and many other European countries.

Exhibit 21: Improving Covid-19 cases have eased travel restrictions and should lead to a travel recovery in 4Q21



Sources: European Centre for Disease Prevention and Control; Bangkok Airways (BA TB)

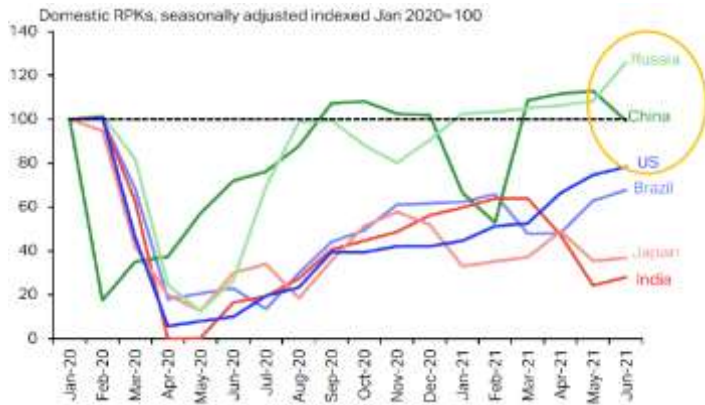
Exhibit 22: IATA's global monthly air connectivity index (Jan-20 to Jun-21)



Source: IATA

However, intercontinental air travel remains low at only 29% of the pre-Covid-19 level due to the unequal vaccination rate among Western and Eastern countries. Meanwhile, China and Russia are the two countries that have successfully seen domestic air travel recover to surpass the pre-Covid-19 levels, since Jan-21 for Russia and Mar-21 for China, thanks to their effective vaccination rollouts and in-house vaccine developments that have ensured vaccine availability for their citizens.

Exhibit 23: Russia and China lead the air travel recovery



Source: IATA

According to IATA, the number of bookings for US-Europe air travel has risen markedly since May-21, particularly for US bookings to Europe, which have doubled within two months to reach 60% of the pre-Covid level. We think that actual intercontinental air travel should begin en masse in 4Q21 from the advanced bookings that would drive up the demand for jet fuel to accommodate the rising number of long-haul transatlantic flights.

Exhibit 25: International air revenue markets for the US (2019)



Source: IATA

The US and Europe were each other's largest air revenue contributors, according to IATA, in 2019 before the Covid-19 pandemic. Hence, we believe that the rebound in US-Europe air flights in 4Q21 is likely to boost the demand for jet fuel to 5.2-5.5mbpd, or 70-80% of the pre-Covid-19 level at 7.2mbpd.

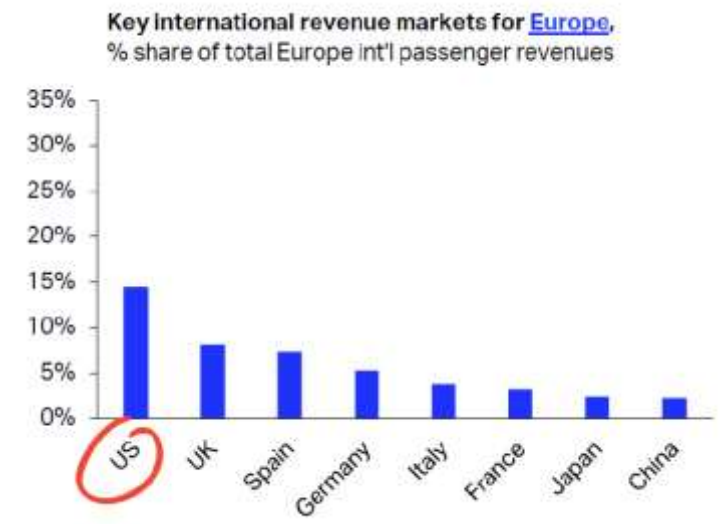
According to IATA's report "Covid-19 One Ocean, Two Shores: Time to Reconnect", dated 28 Jul-21, the revenue and bookings of intra-Europe flights are on the rise, reaching 40-50% of the pre-Covid-19 level in 2019 in most major European countries. This further substantiates our view that the jet fuel demand is on track to recover meaningfully to drive up the jet-crude margin in 4Q21 onward.

Exhibit 24: Bookings for US-Europe air travel



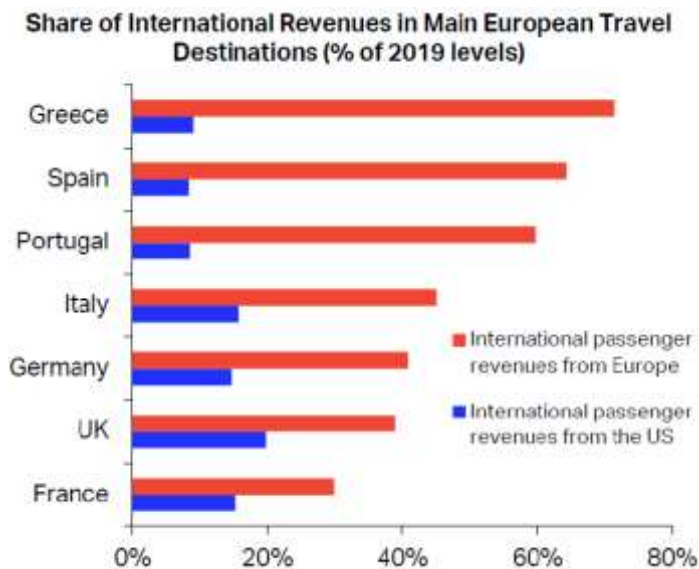
Source: IATA

Exhibit 26: International air revenue markets for Europe (2019)



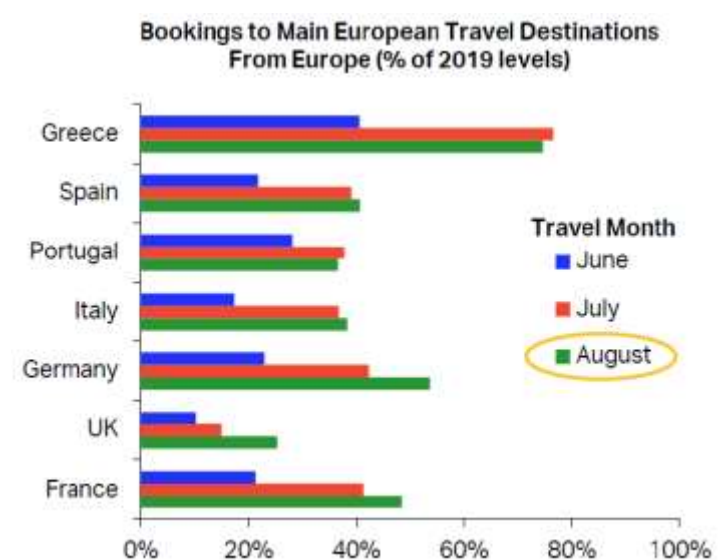
Source: IATA

Exhibit 27: Intra-Europe air flights are on the rise (revenue)



Source: IATA

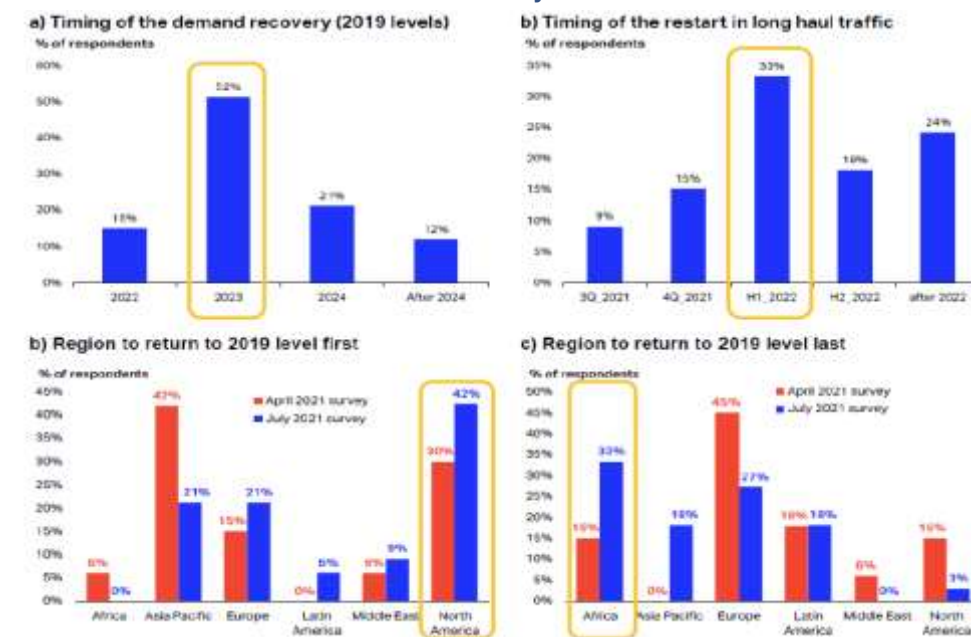
Exhibit 28: Intra-Europe air flights are on the rise (bookings)



Source: IATA

While the outcome of an airline confidence survey conducted in Jul-21 indicates that most travellers expect air travel to return to the pre-Covid level in 2023, we think the pace of air travel will be faster. This is based on the number of bookings for intercontinental flights and the successful vaccination rates in many developed countries which have already reached the 'herd immunity' level, such as the US and UK.

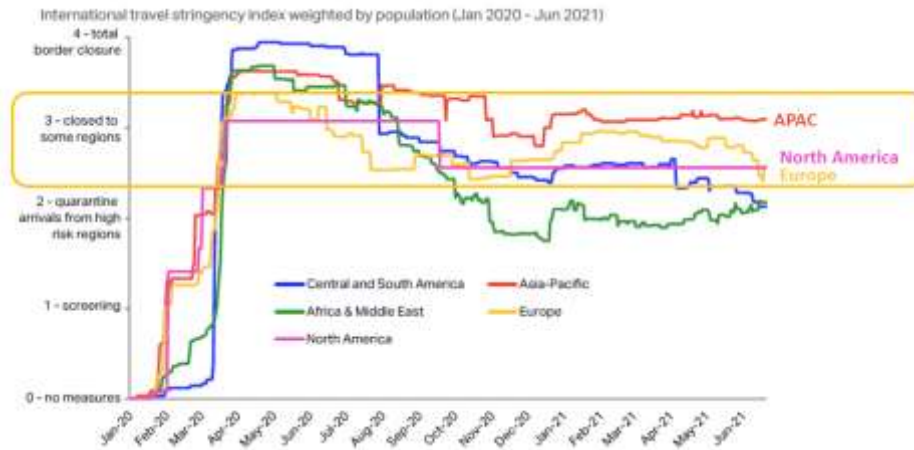
Exhibit 29: Airline business confidence survey outcome



Source: IATA

Meanwhile, international travel restrictions, measured by the international travel stringency index and weighted by population (Jan-20 to Jun-21), conducted by IATA, indicates that the air travel restrictions in the Asia Pacific region (APAC) are much more stringent than in North America, Europe, Latin America, and even Africa, due to the less effective vaccination rates and Covid-19 controls.

Exhibit 30: International travel restrictions are higher in APAC than in North America and Europe

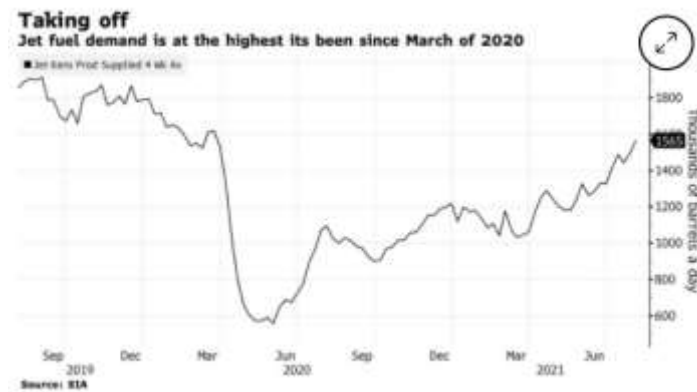


Source: IATA

US jet fuel demand has already recovered at a fast pace since its bottom in May-20, rising to 1.57mpd in August-21, still 16% below the 1.9mbpd pre-Covid level. American travellers will likely return to the skies even if the Delta variant of Covid-19 delays the full recovery by one or two months, in our view.

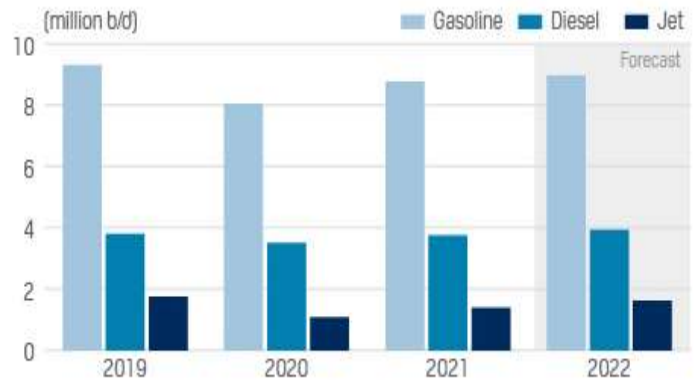
To recover to a 7-8mbpd demand for jet fuel at the pre-Covid level, international flights like those from New York to London and from the US West Coast to Asia will still need to pick up, as would business travel. The EIA projects that the US' average jet fuel demand should rise to 1.3mbpd in 2021, increasing to 1.6mbpd in 2022, according to the EIA's "Short-Term Energy Outlook" report in Aug-21.

Exhibit 31: Jet fuel demand is at its highest in Aug-21 since Mar-20



Source: EIA

Exhibit 32: US gasoline, jet fuel, and diesel demand still lagging behind pre-pandemic levels



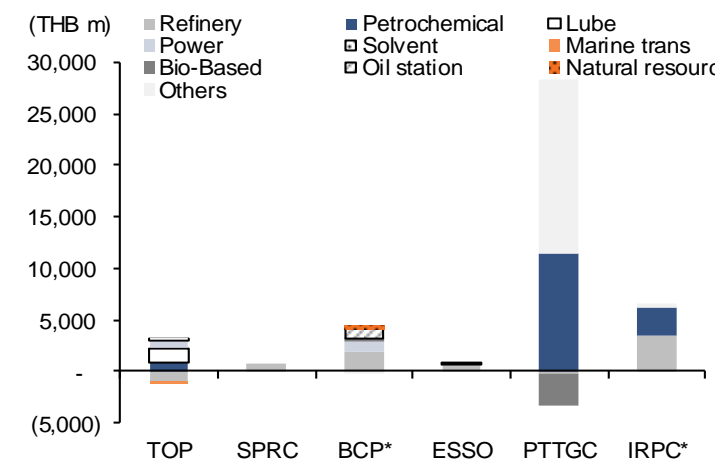
Source: EIA

Valuations remain attractive ahead of stronger market GRMs

We think the refinery sector is the most attractive sector in terms of risk-reward ratio over petrochemical and upstream oil & gas producers, based on 1) their depressed valuations at below 1x P/BV vs the projected improving ROEs; and 2) the likely improving market GRMs on the back of higher jet fuel and diesel demand and lower crude premiums.

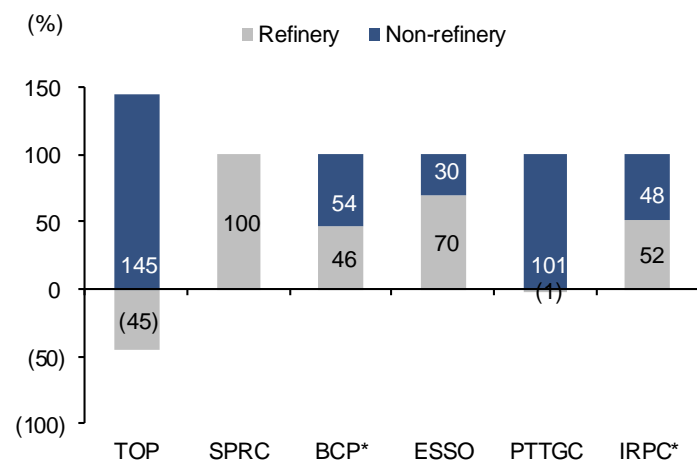
Among the six Thai refiners under our coverage, SPRC, ESSO, IRPC, TOP, and BCP are the five refiners that generate EBITDA from refineries, from the highest at 100% for SPRC to 46% for BCP in 2020. TOP's refinery EBITDA in 2020 suffered significantly from a large inventory loss, but in a normal industry situation TOP would generate 50-60% of its EBITDA from its refinery unit. PTTGC generated the lowest EBITDA at 10% of its total EBITDA, but in 2020, similar to TOP, PTTGC suffered a large inventory loss that resulted in a net loss from its refinery business.

Exhibit 33: Net profit (TOP, SPRC, ESSO, PTTGC) and EBITDA (BCP and IRPC) breakdown (2Q21)



*EBITDA breakdown
Sources: Companies

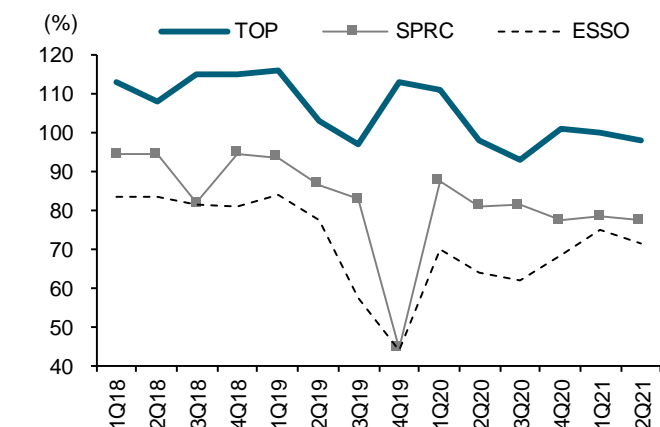
Exhibit 34: Net profit (%) (TOP, SPRC, ESSO, PTTGC) and EBITDA (BCP and IRPC) breakdown (2Q21)



*EBITDA breakdown
Sources: Companies

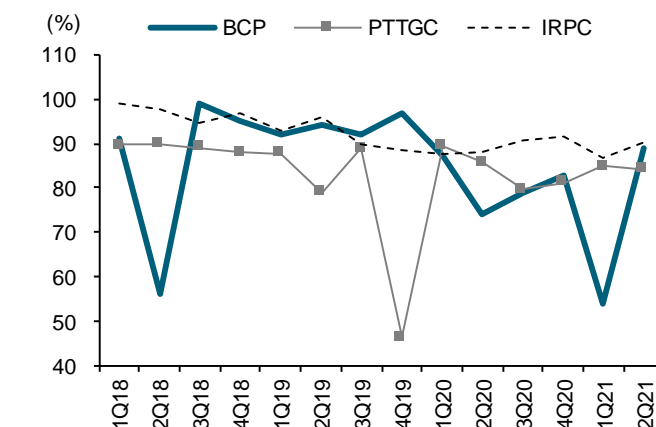
Due to the depressed jet-Dubai margin since 2020, all Thai refiners have lowered their refinery utilisation rates by 10-20 ppts to optimise their profitability, given the unavoidable production of jet that saw a negative margin over crude price in 2020. The poor jet-Dubai margin has led to not only suboptimal utilisation rates but also a poor diesel-Dubai margin, as the excess jet production is mixed to be sold as a diesel since jet and diesel are the two petroleum products in the same middle distillate group. Hence, we expect Thai refiners' refinery utilisation rates to improve by 10-20 ppts to 90-110% in 2022, likely starting in 4Q21 when we project that the margins of jet and diesel over crude will significantly improve q-q and y-y, driven by the higher demand.

Exhibit 35: Quarterly utilisation rates by company



Source: Companies

Exhibit 36: Quarterly utilisation rates by company

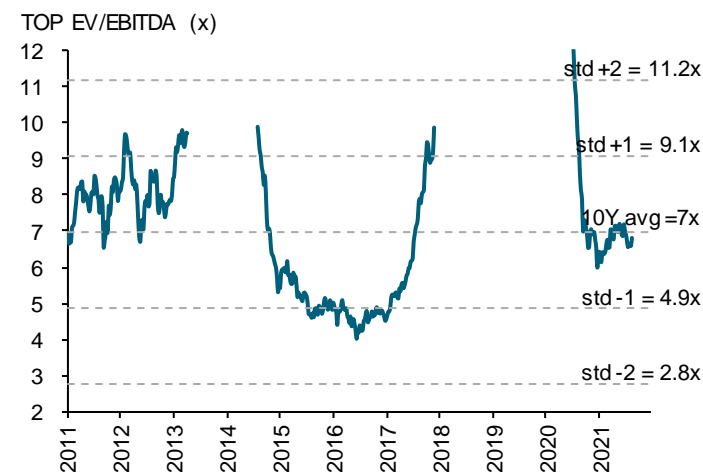


Source: Companies

Depressed valuations despite a recent share price rally. Even after the recent share price rally by over 10% within a week, we think Thai refiners' valuations remain attractive, trading at their valuation bottoms, particularly in terms of forward P/BV.

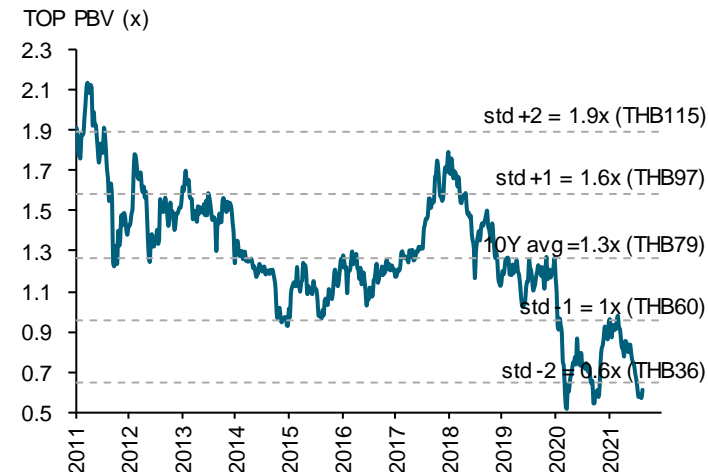
TOP vs SPRC. Among two major Thai refiners, we prefer SPRC over TOP based on its depressed P/BV and lower EV/EBITDA. However, both TOP and SPRC are our two most preferred refiners in the Thai refinery sector due to their high earnings exposure and resiliency to the changes in market GRMs, which we estimate to be in the range of a 3-5% higher net profit for every 1% change in their market GRMs.

Exhibit 37: TOP – EV/EBITDA band



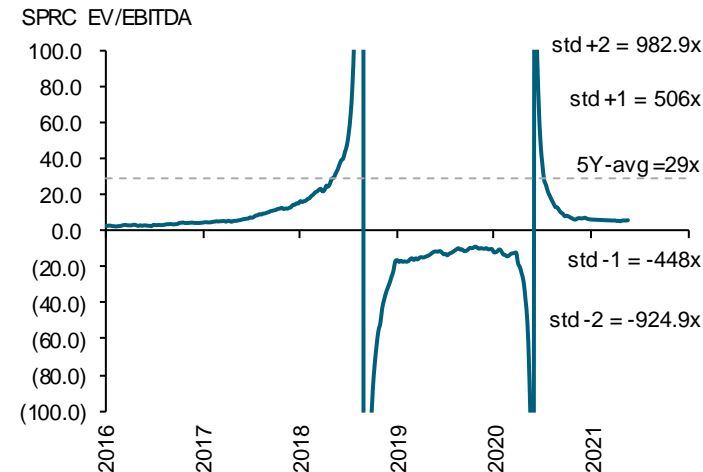
Sources: Bloomberg; FSSIA estimates

Exhibit 38: TOP – forward P/BV band



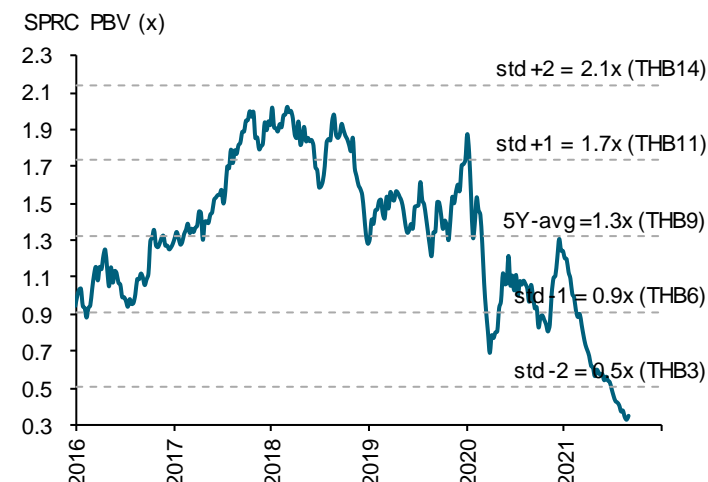
Sources: Bloomberg; FSSIA estimates

Exhibit 39: SPRC – EV/EBITDA band



Sources: Bloomberg; FSSIA estimates

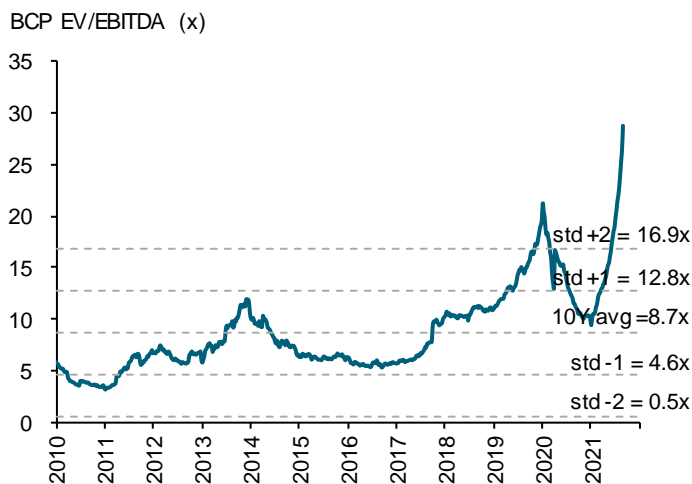
Exhibit 40: SPRC – forward P/BV band



Sources: Bloomberg; FSSIA estimates

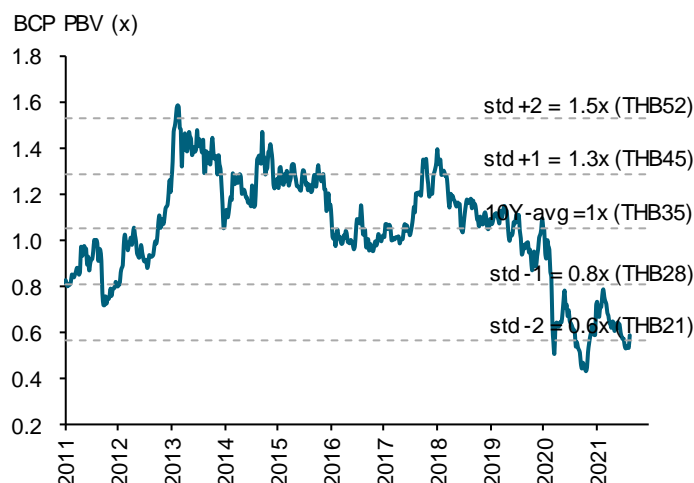
ESSO vs BCP. Both ESSO and BCP have more diversified earnings portfolios, with upstream refineries and integrated downstream oil station businesses. We prefer ESSO over BCP for its stronger net profit recovery on the market GRM recovery due to its lower crude premium cost. ESSO has already temporarily shut down its paraxylene plant in 2Q21, and hence would incur a much lower net loss from its aromatics unit, which has generated a THB0.3b-0.5b quarterly net loss in the past two years.

Exhibit 41: BCP – EV/EBITDA band



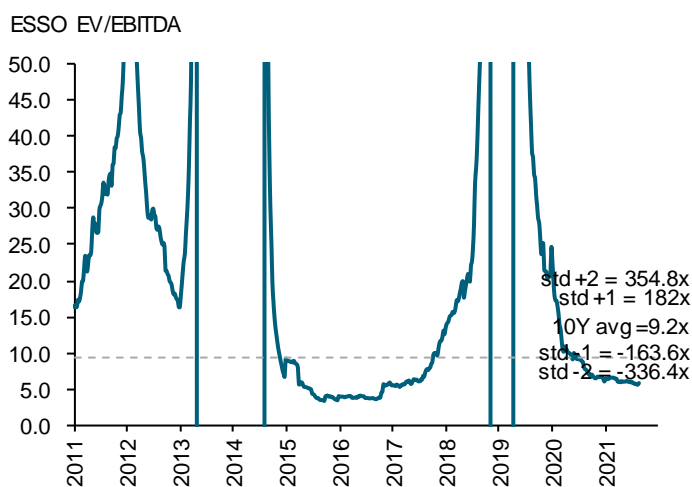
Sources: Bloomberg; FSSIA estimates

Exhibit 42: BCP – forward P/BV band



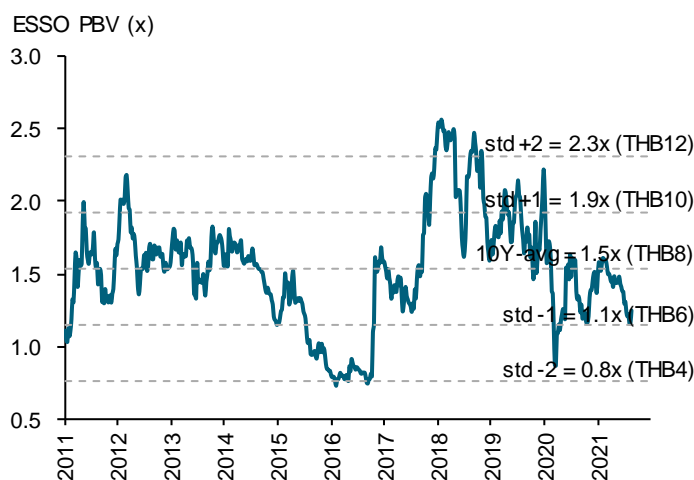
Sources: Bloomberg; FSSIA estimates

Exhibit 43: ESSO – EV/EBITDA band



Sources: Bloomberg; FSSIA estimates

Exhibit 44: ESSO – forward P/BV band

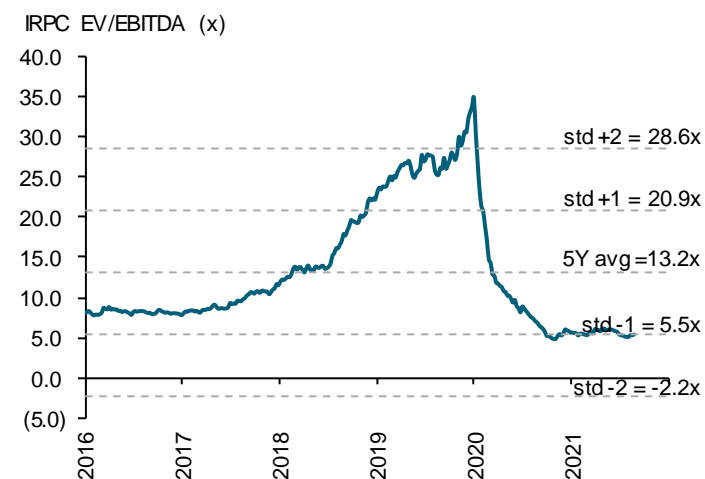


Sources: Bloomberg; FSSIA estimates

IRPC vs PTTGC. While most of IRPC's and PTTGC's earnings come from their petrochemical businesses, we think IRPC's net profit will be more exposed to the market GRM recovery as its refinery net profit normally accounts for 1/3 of its total net profit vs only 10% for PTTGC, due to IRPC's smaller petrochemical net profit than PTTGC's (THB5b-10b for IRPC vs THB30b-40b for PTTGC).

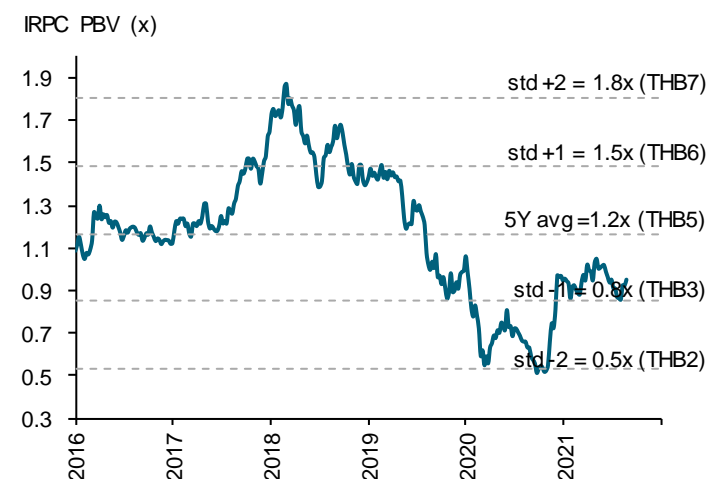
In addition, while the valuations (forward P/BV and EV/EBITDA) for both IRPC and PTTGC have traded at around 1 std below their 5-year historical averages, we think IRPC is more attractive than PTTGC due to the more resilient petrochemical earnings from IRPC's downstream benzene chain in styrene and specialty chemical products, including ABS and polystyrene.

Exhibit 45: IRPC – EV/EBITDA band



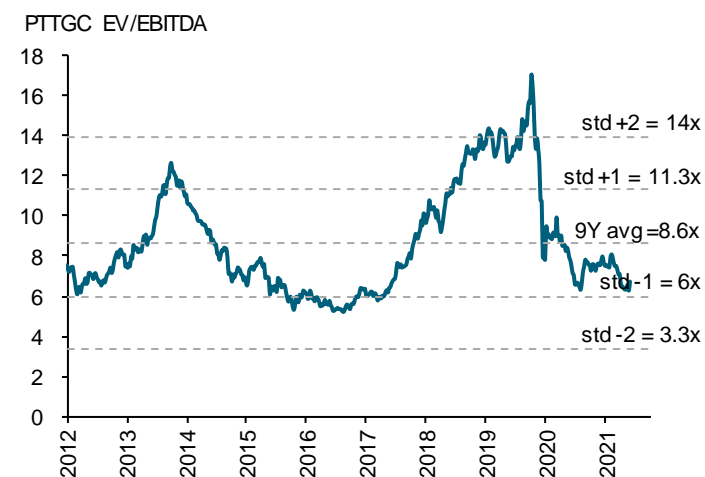
Sources: Bloomberg; FSSIA estimates

Exhibit 46: IRPC – forward P/BV band



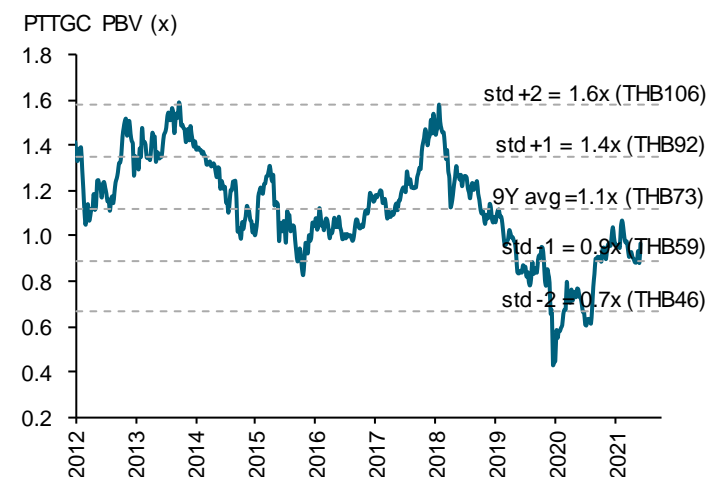
Sources: Bloomberg; FSSIA estimates

Exhibit 47: PTTGC – EV/EBITDA band



Sources: Bloomberg; FSSIA estimates

Exhibit 48: PTTGC – forward P/BV band



Sources: Bloomberg; FSSIA estimates

Exhibit 49: Peer comparisons

Company	BBG code	Rec	Share Price	Target price	Upside	Market Cap	3Y EPS CAGR	----- PE -----		----- ROE -----		---- PBV ----		EV / EBITDA	
								21E	22E	21E	22E	21E	22E	21E	22E
			(LCY)	(LCY)	(%)	(USD m)	(%)	(x)	(x)	(%)	(%)	(x)	(x)	(x)	(x)
THAILAND															
Thai Oil	TOP TB	BUY	49.00	67.00	37	3,088	NA	7.9	8.5	10.6	9.3	0.8	0.8	7.2	7.7
Star Petroleum	SPRC TB	BUY	8.70	11.00	26	1,165	43.7	7.8	6.4	17.5	19.4	1.3	1.2	6.2	3.8
Bangchak Corp	BCP TB	BUY	26.75	38.00	42	1,122	NA	14.0	6.4	5.6	11.5	0.8	0.7	9.5	7.3
Esso Thailand	ESSO TB	BUY	7.80	14.30	83	834	59.2	6.2	5.9	26.3	22.2	1.4	1.2	4.8	4.2
Ptt Global Chem	PTTGC TB	BUY	62.75	75.00	20	8,698	NA	8.7	11.2	11.2	8.7	1.0	1.0	10.8	10.0
Irpc	IRPC TB	BUY	3.98	5.00	26	2,513	NA	7.5	6.6	14.0	14.8	1.0	0.9	5.7	5.1
Tipco Asphalt	TASCO TB	BUY	18.40	22.50	22	897	(5.7)	13.0	9.5	14.8	19.1	1.9	1.7	10.1	7.1
Thailand avg						18,318	19.9	8.8	9.2	12.4	11.6	1.0	1.0	8.8	8.0
INDIA															
Bharat Petrom	BPCL IN	NA	477.00	NA	NA	14,272	37.0	10.3	11.4	24.7	16.3	2.3	1.8	8.1	9.3
Hindustan Petro	HPCL IN	NA	266.65	NA	NA	5,201	34.4	5.0	5.9	24.1	16.9	1.1	1.0	5.5	7.0
Indian Oil	IOCL IN	NA	110.75	NA	NA	14,138	NA	6.8	6.2	14.6	13.9	1.0	0.9	6.6	6.0
India avg						33,612	36.2	8.0	8.4	20.4	15.4	1.5	1.3	7.0	7.5
TAIWAN															
Formosa Petro	6505 TT	NA	96.20	NA	NA	33,082	83.9	18.8	20.3	14.2	12.3	2.6	2.5	11.2	12.5
Taiwan avg						33,082	83.9	18.8	20.3	14.2	12.3	2.6	2.5	11.2	12.5
SOUTH KOREA															
Sk Innovation	096770 KS	NA	247,500.00	NA	NA	19,724	NA	33.1	18.7	4.8	7.6	1.4	1.3	9.8	8.9
Gs Holdings	078930 KS	NA	42,200.00	NA	NA	3,379	417.5	3.8	4.4	12.5	9.5	0.4	0.4	7.5	7.6
S-Oil Corp	010950 KS	NA	91,700.00	NA	NA	8,898	NA	7.8	8.9	21.2	17.1	1.5	1.4	5.6	6.3
South Korea avg						32,001	417.5	22.9	14.5	10.2	10.4	1.3	1.2	8.4	8.1
Refinery under coverage															
Average (all)						117,012	88.68	15.27	13.55	14.58	12.57	1.71	1.58	8.86	9.14

Share price as of 1 Sep 2021

Sources: Bloomberg, FSSIA estimates

Corporate Governance report of Thai listed companies 2020

EXCELLENT LEVEL										
AAV	ADVANC	AF	AIRA	AKP	AKR	ALT	AMA	AMATA	AMATAV	ANAN
AOT	AP	ARIP	ARROW	ASP	BAFS	BANPU	BAY	BCP	BCPG	BDMS
BEC	BEM	BGRIM	BIZ	BKI	BLA	BOL	BPP	BRR	BTS	BWG
CENTEL	CFRESH	CHEWA	CHO	CIMBT	CK	CKP	CM	CNT	COL	COMAN
COTTO	CPALL	CPF	CPI	CPN	CSS	DELTA	DEMCO	DRT	DTAC	DTC
DV8	EA	EASTW	ECF	ECL	EGCO	EPG	ETE	FNS	FPI	FPT
FSMART	GBX	GC	GCAP	GEL	GFPT	GGC	GPSC	GRAMMY	GUNKUL	HANA
HARN	HMPRO	ICC	ICHI	III	ILINK	INTUCH	IRPC	IVL	JKN	JSP
JWD	K	KBANK	KCE	KKP	KSL	KTB	KTC	LANNA	LH	LHFG
LIT	LPN	MAKRO	MALEE	MBK	MBKET	MC	MCOT	METCO	MFEC	MINT
MONO	MOONG	MSC	MTC	NCH	NCL	NEP	NKI	NOBLE	NSI	NVD
NYT	OISHI	ORI	OTO	PAP	PCSGH	PDJ	PG	PHOL	PLANB	PLANET
PLAT	PORT	PPS	PR9	PREB	PRG	PRM	PSH	PSL	PTG	PTT
PTTEP	PTTGC	PYLON	Q-CON	QH	QTC	RATCH	RS	S	S & J	SAAM
SABINA	SAMART	SAMTEL	SAT	SC	SCB	SCC	SCCC	SCG	SCN	SDC
SEAFCO	SEOIL	SE-ED	SELIC	SENA	SIRI	SIS	SITHAI	SMK	SMPC	SNC
SONIC	SORKON	SPALI	SPI	SPRC	SPVI	SSSC	SST	STA	SUSCO	SUTHA
SVI	SYMC	SYNTEC	TACC	TASCO	TCAP	TFMAMA	THANA	THANI	THCOM	THG
THIP	THRE	THREL	TIP	TIPCO	TISCO	TK	TKT	TMB	TMILL	TNDT
TNL	TOA	TOP	TPBI	TQM	TRC	TSC	TSR	TSTE	TSTH	TTA
TTCL	TTW	TU	TVD	TVI	TVO	TWPC	U	UAC	UBIS	UV
VGI	VIH	WACOAL	WAVE	WHA	WHAUP	WICE	WINNER	TRUE		

VERY GOOD LEVEL										
2S	ABM	ACE	ACG	ADB	AEC	AEONTS	AGE	AH	AHC	AIT
ALLA	AMANAHA	AMARIN	APCO	APCS	APURE	AQUA	ASAP	ASEFA	ASIA	ASIAN
ASIMAR	ASK	ASN	ATP30	AUCT	AWC	AYUD	B	BA	BAM	BBL
BFIT	BGC	BJC	BJCHI	BROOK	BTW	CBG	CEN	CGH	CHARAN	CHAYO
CHG	CHOTI	CHOW	CI	CIG	CMC	COLOR	COM7	CPL	CRC	CRD
CSC	CSP	CWT	DCC	DCON	DDD	DOD	DOHOME	EASON	EE	ERW
ESTAR	FE	FLOYD	FN	FORTH	FSS	FTE	FVC	GENCO	GJS	GL
GLAND	GLOBAL	GLOCON	GPI	GULF	GYT	HPT	HTC	ICN	IFS	ILM
IMH	INET	INSURE	IRC	IRCP	IT	ITD	ITEL	J	JAS	JCK
JCKH	JMART	JMT	KBS	KCAR	KGI	KIAT	KOOL	KTIS	KWC	KWM
L&E	LALIN	LDC	LHK	LOXLEY	LPH	LRH	LST	M	MACO	MAJOR
MBAX	MEGA	META	MFC	MGT	MILL	MITSIB	MK	MODERN	MTI	MVP
NETBAY	NEX	NINE	NTV	NWR	OCC	OGC	OSP	PATO	PB	PDG
PDI	PICO	PIMO	PJW	PL	PM	PPP	PRIN	PRINC	PSTC	PT
QLT	RCL	RICHY	RML	RPC	RWI	S11	SALEE	SAMCO	SANKO	SAPPE
SAWAD	SCI	SCP	SE	SEG	SFP	SGF	SHR	SIAM	SINGER	SKE
SKR	SKY	SMIT	SMT	SNP	SPA	SPC	SPCG	SR	SRICHA	SSC
SSF	STANLY	STI	STPI	SUC	SUN	SYNEX	T	TAE	TAKUNI	TBSP
TCC	TCMC	TEAM	TEAMG	TFG	TIGER	TITLE	TKN	TKS	TM	TMC
TMD	TMI	TMT	TNITY	TNP	TNR	TOG	TPA	TPAC	TPCORP	TPOLY
TPS	TRITN	TRT	TRU	TSE	TVT	TWP	UEC	UMI	UOBKH	UP
UPF	UPOIC	UT	UTP	UWC	VL	VNT	VPO	WIIK	WP	XO
YUASA	ZEN	ZIGA	ZMICO							

GOOD LEVEL										
7UP	A	ABICO	AJ	ALL	ALUCON	AMC	APP	ARIN	AS	AU
B52	BC	BCH	BEAUTY	BGT	BH	BIG	BKD	BLAND	BM	BR
BROCK	BSBM	BSM	BTNC	CAZ	CCP	CGD	CITY	CMAN	CMO	CMR
CPT	CPW	CRANE	CSR	D	EKH	EP	ESSO	FMT	GIFT	GREEN
GSC	GTB	HTECH	HUMAN	HL	INOX	INSET	IP	JTS	JUBILE	KASET
KCM	KKC	KUMWEL	KUN	KWG	KYE	LEE	MATCH	MATI	M-CHAI	MCS
MDX	MJD	MM	MORE	NC	NDR	NER	NFC	NNCL	NPK	NUSA
OCEAN	PAF	PF	PK	PLE	PMTA	POST	PPM	PRAKIT	PRECHA	PRIME
PROUD	PTL	RBF	RCI	RJH	ROJNA	RP	RPH	RSP	SF	SFLEX
SGP	SISB	SKN	SLP	SMART	SOLAR	SPG	SQ	SSP	STARK	STC
SUPER	SVOA	TC	TCCC	THMUI	TIW	TNH	TOPP	TPCH	TIPIP	TPLAS
TTI	TYCN	UKEM	UMS	VCOM	VRANDA	WIN	WORK	WPH		

Description

Score Range

Excellent

90-100

Very Good

80-89

Good

70-79

Disclaimer:

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The survey result is as of the date appearing in the Corporate Governance Report of Thai Listed Companies. As a result, the survey results may be changed after that date. FSS International Investment Advisory Company Limited does not confirm nor certify the accuracy of such survey results.

* CGR scoring should be considered with news regarding wrong doing of the company or director or executive of the company such unfair practice on securities trading, fraud, and corruption SEC imposed a civil sanction against insider trading of director and executive; ** delisted

Source: Thai Institute of Directors Association (IOD); FSSIA's compilation

Anti-corruption Progress Indicator 2020

CERTIFIED										
2S	ADVANC	AI	AIE	AIRA	AKP	AMA	AMANA	AP	AQUA	ARROW
ASK	ASP	AYUD	B	BAFS	BANPU	BAY	BBL	BCH	BCP	BCPG
BGC	BGRIM	BJCHI	BKI	BLA	BPP	BROOK	BRR	BSBM	BTS	BWG
CEN	CENTEL	CFRESH	CGH	CHEWA	CHOTI	CHOW	CIG	CIMBT	CM	CMC
COL	COM7	CPALL	CPF	CPI	CPN	CSC	DCC	DELTA	DEMCO	DIMET
DRT	DTAC	DTC	EASTW	ECL	EGCO	FE	FNS	FPI	FPT	FSS
FTE	GBX	GC	GCAP	GEL	GFPT	GGC	GJS	GPSC	GSTEEL	GUNKUL
HANA	HARN	HMPRO	HTC	ICC	ICHI	IFS	INET	INSURE	INTUCH	IRPC
ITEL	IVL	K	KASET	KBANK	KBS	KCAR	KCE	KGI	KKP	KSL
KTB	KTC	KWC	L&E	LANNA	LHFG	LHK	LPN	LRH	M	MAKRO
MALEE	MBAX	MBK	MBKET	MC	MCOT	MFC	MFEC	MINT	MONO	MOONG
MPG	MSC	MTC	MTI	NBC	NEP	NINE	NKI	NMG	NNCL	NSI
NWR	OCC	OCEAN	OGC	ORI	PAP	PATO	PB	PCSGH	PDG	PDI
PDJ	PE	PG	PHOL	PL	PLANB	PLANET	PLAT	PM	PPP	PPPM
PPS	PREB	PRG	PRINC	PRM	PSH	PSL	PSTC	PT	PTG	PTT
PTTEP	PTTGC	PYLON	Q-CON	QH	QLT	QTC	RATCH	RML	RWI	S & J
SABINA	SAT	SC	SCB	SCC	SCCC	SCG	SCN	SEAOIL	SE-ED	SELIC
SENA	SGP	SIRI	SITHAI	SMIT	SMK	SMPC	SNC	SNP	SORKON	SPACK
SPC	SPI	SPRC	SRICHA	SSF	SSSC	SST	STA	SUSCO	SVI	SYNTEC
TAE	TAKUNI	TASCO	TBSP	TCAP	TCMC	TFG	TFI	TFMAMA	THANI	THCOM
THIP	THRE	THREL	TIP	TIPCO	TISCO	TKT	TMB	TMD	TMILL	TMT
TNITY	TNL	TNP	TNR	TOG	TOP	TPA	TPCORP	TPP	TRU	TSC
TSTH	TTCL	TU	TVD	TVI	TVO	TWPC	U	UBIS	UEC	UKEM
UOBKH	UWC	VGI	VIH	VNT	WACOAL	WHA	WHAUP	WICE	WIJK	XO
ZEN	TRUE									
DECLARED										
7UP	ABICO	AF	ALT	AMARIN	AMATA	AMATAV	ANAN	APURE	B52	BKD
BM	BROCK	BUI	CHO	CI	COTTO	DDD	EA	EFORL	EP	ERW
ESTAR	ETE	EVER	FSMART	GPI	ILINK	IRC	J	JKN	JMART	JMT
JSP	JTS	KWG	LDC	MAJOR	META	NCL	NOBLE	NOK	PK	PLE
ROJNA	SAAM	SAPPE	SCI	SE	SHANG	SINGER	SKR	SPALI	SSP	STANLY
SUPER	SYNEX	THAI	TKS	TOPP	TRITN	TTA	UPF	UV	WIN	ZIGA

Level	
Certified	This level indicates practical participation with thoroughly examination in relation to the recommended procedures from the audit committee or the SEC's certified auditor, being a certified member of Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) or already passed examination to ensure independence from external parties.
Declared	This level indicates determination to participate in the Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC)

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Note: Companies participating in Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) under Thai Institute of Directors (as of June 24, 2019) are categorised into: 1) companies that have declared their intention to join CAC, and; 2) companies certified by CAC.

Source: The Securities and Exchange Commission, Thailand; * FSSIA's compilation

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ANALYST(S) CERTIFICATION

Suwat Sinsadok FSS International Investment Advisory Securities Co., Ltd

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Company	Ticker	Price	Rating	Valuation & Risks
Thai Oil	TOP TB	THB 49.00	BUY	Downside risks to our EV/EBITDA-based TP are a sharp rise in oil price and weak demand for refined oil products.
Star Petroleum Refining	SPRC TB	THB 8.70	BUY	TP is based on EV/EBITDA. Downside risks are a sharp rise in oil price and weak demand for refined oil products.
Bangchak Corp	BCP TB	THB 26.75	BUY	The downside risks to our SoTP-based TP include: 1) lower-than-expected demand for petroleum products; 2) higher crude premiums; and 3) unplanned shutdowns of the company's refinery plants.
Esso Thailand	ESSO TB	THB 7.80	BUY	The downside risks to our SoTP-based TP on ESSO include 1) lower-than-expected demand for petroleum products, 2) a higher crude premium, and 3) unplanned shutdowns of its refinery and petrochemical plants.
PTT Global Chemical	PTTGC TB	THB 62.75	BUY	The key downside risks to our EV/EBITDA-based TP are the weaker-than-expected HDPE price and HDPE-naphtha margin.
IRPC PCL	IRPC TB	THB 3.98	BUY	Key risks to our positive view and EV/EBITDA-based target price are weaker-than-expected oil product demand growth and lower-than-expected PP-naphtha and SM-benzene margins.
Tipco Asphalt	TASCO TB	THB 18.40	BUY	Downside risks to our EV/EBITDA multiple based TP include 1) a lower asphalt margin due to a oversupply in Asia on the back of faster recovery of utilisation rate for global refiners; and 2) a lower-than-expected supply of alternative crudes and asphalt.

Source: FSSIA estimates

Additional Disclosures

Target price history, stock price charts, valuation and risk details, and equity rating histories applicable to each company rated in this report is available in our most recently published reports. You can contact the analyst named on the front of this note or your representative at Finansia Syrus Securities Public Company Limited

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All share prices are as at market close on 1-Sep-2021 unless otherwise stated.

RECOMMENDATION STRUCTURE

Stock ratings

Stock ratings are based on absolute upside or downside, which we define as (target price* - current price) / current price.

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

HOLD (H). The upside or downside is less than 10%.

REDUCE (R). The downside is 10% or more.

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.

* In most cases, the target price will equal the analyst's assessment of the current fair value of the stock. However, if the analyst doesn't think the market will reassess the stock over the specified time horizon due to a lack of events or catalysts, then the target price may differ from fair value. In most cases, therefore, our recommendation is an assessment of the mismatch between current market price and our assessment of current fair value.

Industry Recommendations

Overweight. The analyst expects the fundamental conditions of the sector to be positive over the next 12 months.

Neutral. The analyst expects the fundamental conditions of the sector to be maintained over the next 12 months.

Underweight. The analyst expects the fundamental conditions of the sector to be negative over the next 12 months.

Country (Strategy) Recommendations

Overweight (O). Over the next 12 months, the analyst expects the market to score positively on two or more of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.

Neutral (N). Over the next 12 months, the analyst expects the market to score positively on one of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.

Underweight (U). Over the next 12 months, the analyst does not expect the market to score positively on any of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.