Energy Sector – Overweight

News Update

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Geopolitical tensions continue

- **Strong demand growth is still a key to drive oil market**
- **Major listed US shales pledge to limit output growth at 5%**
- **Russian-Ukraine tension remains**
- **Iran's negotiator confident nuclear deal soon to close**

Oil market has been very volatile this week which was mainly driven by geopolitical tension with Iran's nuclear talk is expected to be concluded soon while Russia-Ukraine tension remains uncertain. Market is also concerning on rising US crude oil production, especially from the Permian basin. However, cost pressure and acute supply chain bottleneck could slow down the growth in 2022F. Listed US producers are also providing 2022F guidance and aim to limit output growth at 5%.

Strong demand growth is still a key to drive oil market

- **Continue declined in US oil product inventories**. US commercial crude oil inventory up by 1.1m bbls w-w, against the draw of 1.77m bbls expected by the market. However, refined oil product inventories continue to decline this week. Gasoline inventories decreased by another 1.3m bbls while distillate inventories saw dropped by 1.55m bbls w-w.

- **Rising Permian activity, but overall output growth still limited.** Crude supply from Permian basin (43% of total US crude production) averaged 5.06m b/d in January, surpassing the 5 million marks for the first time in data going back to 2007, according to the Energy Information Administration (EIA). Despite rising productivity at Permian basin, overall US crude oil production growth remained limited YTD. While Permian production grew by 68k b/d in Jan vs Dec 21, total US oil production dropped by 95k b/d. Additionally, EIA forecast that production growth will be at 0.76m b/d in 2022 which is much lower than 2018-19 when oil price was at a lower level.

- **Major listed US shales pledge to limit output growth at 5%.** Last week, several listed US shale oil producers announced 4Q21 results and set 2022 guidance. Influential players like Pioneer Natural Resources, Devon Energy Corp. and Continental Resources just pledged to limit 2022 production increases to no more than 5%. The production growth target for 2022 is set only 1-2% growth from 2021. Other listed producers are also providing mild production growth guidance for 2022 as the key focus is on cleaning up balance sheets, lowering break even prices and returning cash back to investors, not looking for growth.

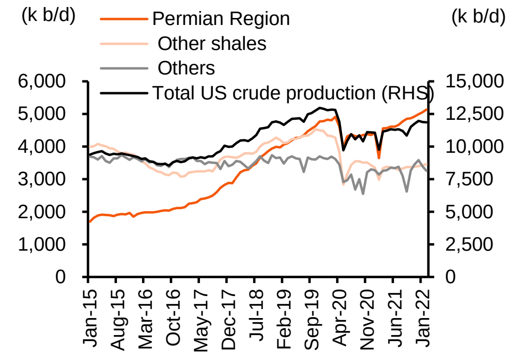
- **Cost pressure and acute supply chain bottleneck could slow down the growth**. Rising costs inflation and a depleting backlog of drilled-but-uncompleted (DUC) wells will force many shale producers to spend more just to maintain output in 2022F. Institute for Energy Economics and Financial Analysis (IEEFA) estimates that capital spending could rise by almost 20% just to maintain production at the same level as last year. Another recent concern is shortage of frac sand, a vital material used for

Ex 1: US Weekly data

('000 bbls)	Weekly change		
Crude Oil	+1,121		
Gasoline	(1,331)		
Distillates	(1,553)		
Jet Kerosene	(669)		
(kbpd)	**Weekly change**	**% Change**	**Current number**
Production	0	0.0%	11,600
Refinery Runs	(676)	-4.3%	14,902

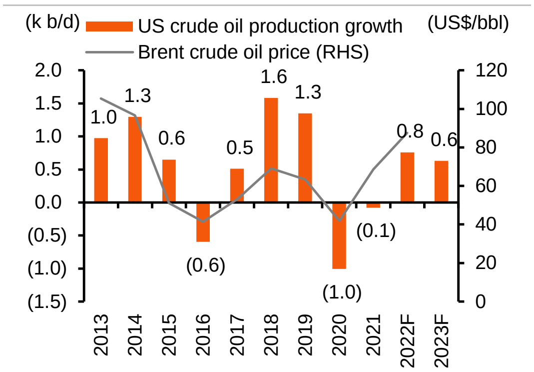
Source: EIA

Ex 2: US Crude Oil Production



Source: EIA

Ex 3: US Crude Oil Production Growth



Source: EIA

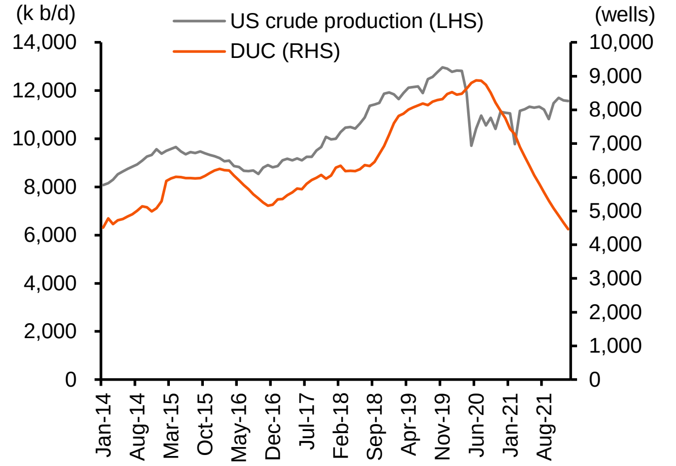
hydraulic fracturing of oil wells. The sand market is so tight because fewer people have been working in the mines and there has been a shortage of truck drivers. Consultancy Rystad estimates that spot prices are between $50 and $70 a ton, sharply above last year's levels of $20 to $25 per ton. Finally, companies will have to drill many more wells in this year just to maintain output as the supply of DUC wells dries up. DUCs are oil and gas wells where drilling has been done but the producer has not gone through the process of finishing the well to bring it online. The industry is more focusing on well completion activity than drilling activities in order to keep cost low given using DUCs inventory is a faster and cheaper way to bring production online rather than drilling new wells.

Ex 4: Major US Shale Oil Producers Capital Discipline Intact In 2022F

Company	Capex			Oil product (k b/d)			% 22F Growth	
	2021	2022F	Growth	2021	2022F			
	(US$ bn)	(US$ bn)	(%)		Low	High	Low	High
Pioneer	3.3	3.3-3.6	9%	357	350	365	-2%	2%
Marathon	1.03	1.2	17%	162	159	165	-2%	2%
Devon	1.99	1.9-2.2	16%	291	285	295	-2%	1%
Continental	1.54	1.8	15%	202	195	205	-3%	1%
Total	**7.86**	**8.8**	**12%**	**1012**	**989**	**1030**	**-2%**	**2%**

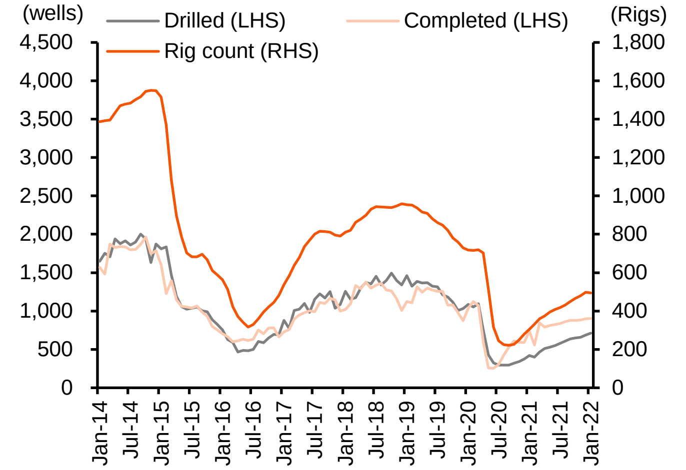
Sources: Company data

Ex 5: Industry Depleting DUCs Inventory To Keep Output



Sources: EIA

Ex 6: Drilling Activities Increasing But Slowly



Sources: EIA

Update on geopolitical situations

- **Russia-Ukraine tension remains.** The situation remains uncertain at this stage despite Russia said on Tuesday that some troops are returning to bases which imply a possible sign of de-escalation of the tension. However, Ukraine and Russia-backed rebels in Eastern Ukraine accused each other on Thursday of violating a ceasefire as tensions between the two neighboring countries escalated amid warnings from the West that Russia could invade Ukraine any day now. Meanwhile, US president, Joe Biden, tells reporters that the probability of an invasion is "very high".

- **Iran's nuclear deal progress**. A tweet from Iran's main negotiator in the nuclear deal claimed that an agreement was closer than ever, sending oil prices falling on Thursday. Iran has already started preparing for the return of its crude to international markets, with officials from the state-owned oil company having visited South Korea to discuss deals with local refiners. Key sticking points include remaining Iranian demands for verification that sanctions relief will give sustainable economic benefits, and the pace and shape of implementation. Iran has also pushed hard for guarantees that the deal would stick even under a new US president, but US negotiators have been clear that they cannot deliver this.

Ex 7: Prices And Spreads

(US$/bbl)	1Q21	2Q21	3Q21	4Q21	QTD	Nov-21	Dec-21	Jan-22	MTD	Last
Oil prices										
Dated Brent	60.84	68.63	72.94	78.40	89.28	80.75	74.27	85.49	94.69	95.88
Dubai	59.70	66.43	71.31	76.02	86.45	79.78	72.69	83.05	91.31	91.14
WTI	58.07	66.10	70.52	76.08	86.35	78.65	71.69	82.98	91.17	91.07
Crack spreads over Dubai										
Gasoline	7.49	10.67	12.41	15.59	15.38	16.31	14.49	14.79	16.22	18.67
Jet fuel	4.25	5.36	5.80	11.02	11.97	9.17	10.37	12.36	11.42	11.31
Diesel	5.37	6.09	7.48	10.12	12.42	8.89	10.71	12.10	12.87	10.74
High-sulfur fuel oil	(4.28)	(6.80)	(5.42)	(5.83)	(8.48)	(8.88)	(6.45)	(7.23)	(10.27)	(11.39)
Refining margins										
FCC / Dubai	1.21	0.95	0.85	5.81	5.74	4.21	5.78	5.93	5.45	5.27
Hydrocracking / Dubai	0.71	0.77	1.11	6.11	6.69	4.50	6.19	6.79	6.55	6.37
FCC / Espo	1.47	1.55	1.24	6.20	6.13	4.60	6.18	6.33	5.85	5.67
FCC / Arab Light	0.56	(0.51)	(0.64)	4.32	4.25	2.72	4.30	4.45	3.96	3.78
Hydrocracking / Murban	2.29	2.81	3.41	8.41	8.99	6.80	8.49	9.08	8.85	8.67
(US$/tonne)										
Aromatics spreads										
PX-naphtha	185	232	229	127	186	112	119	175	207	212
BZ-naphtha	191	367	350	231	230	193	223	239	212	227
Olefin spreads										
HDPE-naphtha	583	576	462	505	427	510	536	431	417	427
LDPE-naphtha	959	936	821	920	767	962	918	771	757	787
PP-naphtha	771	709	557	562	457	565	538	459	452	467
Ethylene-naphtha	416	406	304	321	182	307	319	156	232	337
Propylene-naphtha	461	436	294	242	233	228	254	240	219	242
Henry Hub Gas (US$/mmbtu)	2.73	2.97	4.32	3.72	4.33	5.12	3.86	4.26	4.45	4.43
Coal (Newcastle) (US$/tonne)	87.47	106.49	165.89	169.60	218.99	153.53	164.42	209.07	233.17	232.35

Source: Bloomberg

Ex 8: Valuation

	Rating	Current price (Bt)	Target price (Bt)	*Upside/ (Downside) (%)*	Market cap (US$ m)	Norm EPS growth 2021F (%)	Norm EPS growth 2022F (%)	Norm PE 2021F (x)	Norm PE 2022F (x)	EV/EBITDA 2021F (x)	EV/EBITDA 2022F (x)	Yield 2021F (%)	Yield 2022F (%)
BANPU	BUY	10.90	22.00	*101.8*	2,293	na	(0.3)	4.6	4.7	4.1	3.7	7.0	7.3
BCP	BUY	30.75	32.00	*4.1*	1,316	na	(1.2)	9.2	9.3	4.3	6.8	6.5	6.5
ESSO	HOLD	7.65	8.00	*4.6*	823	na	na	na	11.1	18.4	8.6	0.0	0.0
IRPC	BUY	3.98	4.40	*10.6*	2,528	na	38.2	20.8	15.1	9.4	9.0	2.0	3.3
IVL	BUY	49.75	60.00	*20.6*	8,684	260.7	22.9	12.0	9.8	7.9	7.0	5.0	5.1
PTG	BUY	14.80	19.00	*28.4*	768	(39.4)	34.8	22.0	16.3	7.7	7.1	2.3	3.1
PTT	BUY	39.50	46.00	*16.5*	35,074	133.3	14.0	12.7	11.1	4.2	4.3	5.1	5.1
PTTEP	BUY	130.00	152.00	*16.9*	16,044	105.6	32.0	11.7	8.9	3.5	2.8	3.8	4.6
PTTGC	HOLD	55.00	56.00	*1.8*	7,709	270.7	(17.2)	8.8	10.6	8.3	8.5	6.8	4.7
SPRC	SELL	9.00	8.40	*(6.7)*	1,213	na	na	na	12.3	15.4	6.7	5.4	3.2
SUSCO	BUY	3.80	5.20	*36.8*	130	2.2	26.0	17.9	14.2	7.3	5.9	2.9	3.5
TOP	SELL	53.25	46.00	*(13.6)*	3,377	na	16.2	19.5	16.8	15.2	17.7	4.9	2.4

Sources: Company data, Thanachart estimates

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