

Binh Son Refinery (BSR)

Setting stage for 4Q turnaround

July 27, 2020

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Initiate coverage with BUY rating and target price of VND8,100

We initiate our coverage of BSR with a BUY rating and a target price of VND8,100. Our target price is based on a mid-cycle P/B multiple derived from our three-stage dividend discount model. We apply a mid-cycle valuation for our target price to reflect our view for more modest recovery in domestic gasoline prices amid an extended period of weak oil prices.

Price recovery underway for 4Q earnings turnaround

Local ex-factory gasoline and diesel prices have bounced back by 48% and should allow steady recovery in margins despite our outlook for a flatter trajectory in oil price recovery. BSR returned to profitability in June and volumes have come back to set the stage for an earnings turnaround for 4Q after August's two-month scheduled maintenance shutdown. The three-year annual maintenance overhaul should reduce 3Q utilization to 16% but after completion we expect the company to be on track for sequential earnings recovery into 2021E.

Upgrading facilities should be ready by 2022E alongside the start of localized petrochemical production

Vietnam will begin local production of petrochemicals when onshore capacity is ready for startup in 2023E. BSR is also currently upgrading facilities to enter into the petrochemical market. We strongly believe this initial step is significant and marks the beginning of a much more substantial push into petrochemicals, especially in the context of Vietnam's sizable LNG capacity expansion.

BUY initiate

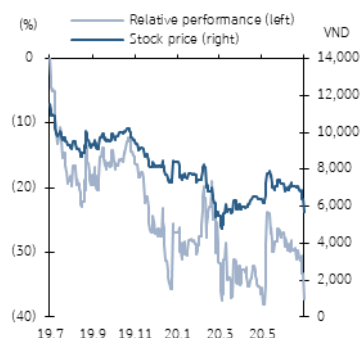
Target Price	VND8,100
Total return (%)	37.3%
Current price (Jul 27)	VND5,900
Consensus target price	VND6,000
Mkt capitalization (USDbn)	USD789mn

Trading data	
Free float (%)	7.9%
Avg trading value (3M)	USD1.25mn
Foreign available (%)	7.9%
Major shareholders (%)	PetroVietnam (92%)

Share price performance				
(%)	1M	3M	6M	12M
Absolute	-20.8	-1.7	-32.1	-50.4
Relative	-14.1	-3.5	-14.3	-37.3

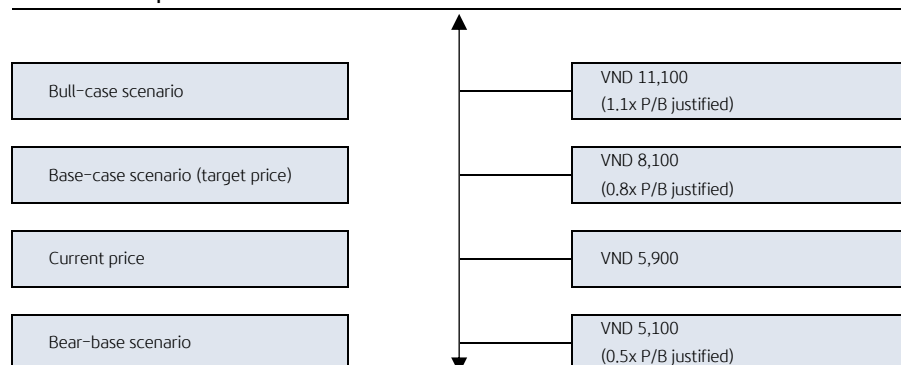
Forecast earnings & valuation

Revenue (VNDbn)	102,824	61,429	90,819	95,360
EBIT	2,869	(2,699)	4,063	4,497
NP attributable to parent	2,914	(2,942)	3,355	3,705
EPS (VND)	940	(949)	1,082	1,195
EPS growth (%)	(22.3)	(201.0)	(214.0)	10.4
P/E (x)	6.3	(6.2)	5.5	4.9
EV/EBITDA (x)	3.1	(42.2)	2.9	3.1
P/B (x)	0.5	0.6	0.5	0.5
ROE (%)	8.9	(9.1)	10.4	10.6
Div yield (%)	2.8	0.0	2.7	6.8



Source: Bloomberg, KB Securities Vietnam

Investment opinion & risks



Base-case scenario: catalysts

- 1) Brent prices above USD55 in 2021E
- 2) 4Q earnings turnaround
- 3) Higher diesel prices on IMO2020

Bull-case scenario: upside risk

- 1) Brent prices above USD55 in 2020E
- 2) Spike in diesel prices on IMO2020
- 3) Strong gasoline prices

Bear-case scenario: downside risk

- 1) Coronavirus second wave
- 2) Weak diesel prices despite IMO2020
- 3) Failure to turnaround earnings in 4Q

Revised earnings estimates

(VNDbn, %)	Revised		Previous		Change	
	2020E	2021E	2020E	2021E	2020E	2021E
Revenue	61,429	90,819	49,836	89,730	23.5	1.2
EBIT	(2,699)	4,063	0	1,944	na	109.0
OP	(2,901)	3,547	(909)	1,944	219.1	82.5
NP after MI	(2,942)	3,355	(909)	1,935	223.7	73.4

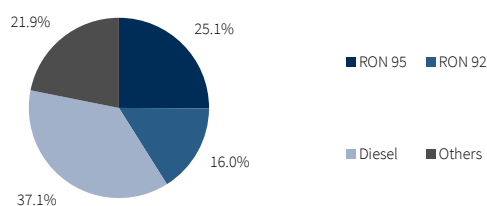
Source: Bloomberg, KB Securities Vietnam

KBSV estimate vs consensus

(VNDbn, %)	KBSV estimates		Consensus		Difference	
	2020E	2021E	2020E	2021E	2020E	2021E
Revenue	61,429	90,819	49,836	89,730	23.5	1.2
EBIT	(2,699)	4,063	0	1,944	na	109.0
OP	(2,901)	3,547	(909)	1,944	219.1	82.5
NP after MI	(2,942)	3,355	(909)	1,935	223.7	73.4

Source: Bloomberg, KB Securities Vietnam

Revenue composition (2019)



Source: Company reports, KB Securities Vietnam

Peer group comparison

(USDbn, x, %)	Mkt Cap	12m fwd P/E	3y EPS CAGR	12m fwd ROE	12m fwd P/B
BSR VN	0.8	-6.7	-18.7	2.1	0.6
GAS VN	5.3	14.3	-5.7	17.6	2.4
PLX VN	2.2	19.8	0.0	11.8	1.9
PVT VN	0.1	5.4	-6.9	9.4	0.4
PVS VN	0.2	6.5	-7.5	6.6	0.4
PVD VN	0.2	21.9	13.8	0.9	0.3

Source: Bloomberg, KB Securities Vietnam

Setting stage for 4Q rebound

Binh Son Refinery (BSR): 4Q turnaround and entering petrochemical market

We initiate our coverage of BSR with a BUY rating and a target price of VND8,100. Our target price is based on a mid-cycle P/B multiple derived from our three-stage dividend discount model. We apply a mid-cycle valuation for our target price to reflect our view for more modest recovery in domestic gasoline prices amid an extended period of weak oil prices.

Local ex-factory gasoline and diesel prices have bounced back by 48% and should allow steady recovery in margins despite slower oil price recovery. BSR returned to profitability in June and volumes have come back to set the stage for an earnings turnaround for 4Q after August's two-month scheduled maintenance shutdown. BSR is also currently upgrading facilities to enter into the petrochemical market.

We estimate CAGR at 17.5% between 2021E and 2025E. Earnings performance should be better for 2021E at VND3,335 billion due to: 1) refinery product prices back at pre-pandemic and profitable levels; and 2) utilization ratios back to normal levels at 110%. We also assume on-time completion of the USD1.8 billion upgrading and expansion plan in 2023E despite current financing difficulties. The upgrade/expansion should: 1) boost total capacity by 30%; 2) upgrade facilities to complex refining from simple refining and diversify feedstock to both sour and sweet crude oil; and 3) increase the percentage of higher-margin petrochemical products.

Table 1. Binh Son Refinery (BSR) – Valuation (DDM) & target price (VND, %)

Line item	Notation		Notes
Cost of equity	K_E	15.6%	$r_f + (B_E * m)$
Re-levered beta	B_E	1.417	$B_A(1 + ((1-t)*D/E))$
Unlevered beta	B_A	1.221	BSR unlevered beta
Terminal assumptions			
Sustainable ROE	ROE	8.0%	Long-term ROE
Div payout ratio	p	60.0%	Long-term payout ratio
Sustainable growth	g	3.2%	$ROE * (1 - p)$
Assumptions			
Target gearing	D/E	20.0%	Long-term debt/equity ratio
Statutory tax rate	t	20.0%	Marginal corporate tax rate
Market risk premium	m	8.9%	10-year expected market return – risk free rate
Risk free rate	r_f	3.0%	10-year government bond
Terminal value as % of firm value		87.7%	
PV of future dividends (VNDbn)		4,231	
PV of terminal value (VNDbn)		30,078	
PV of Firm (VNDbn)		34,309	
Total return		37.3%	
Target price (VND)		8,100	
Dividend per share (VND)		0	

Source: KB Securities Vietnam

Our 12-month target price set to mid-cycle price objective vs fully-growth loaded valuation

Our valuation is based on the three-stage dividend discount model (DDM) that utilizes the capital asset pricing model (CAPM) to determine an appropriate discount rate for projected cash dividends/stock buybacks for individual stocks. We consider valuations generated from the DDM as fully-growth loaded assessments of value. Additionally, we estimate the ex-growth price-to-book multiple by modifying the Gordon Growth model $[(ROE-g)/(COE-g)]$ to assume zero growth or simply the company's sustainable return on equity (ROE) divided by the cost of equity (COE). Our mid-cycle target prices is then based the average of the fully-growth loaded value of the company and the ex-growth estimate.

Table 2. KBSV – Valuation methodology

Gordon growth model	
Justified P/B multiple	= $\frac{(ROE - g)}{(COE - g)}$
Ex-growth model	
Ex-growth P/B multiple	= $\frac{ROE}{COE}$
Mid-cycle model	
Mid-cycle P/B multiple	= Average of: [DDM valuation & Ex-growth valuation]

Source: KB Securities Vietnam

Unexpected 2Q losses despite VND500 billion in provision reversals

Losses for 2Q reached VND1,897 billion versus 2019's profits of VND106 billion on revenue that plunged by 51% YoY to VND13,736 billion. Weak 2Q results should have largely been expected as they still reflect: 1) the brunt of the pandemic-induced fall in global refinery product demand; and 2) decreased domestic output and consumption due to Vietnam's nationwide lockdown. Losses for 1H were VND4,245 billion versus last year's earnings of VND704 billion but 2Q losses did narrow on VND500 billion in reversals for 1Q's inventory provisions with the bounce back in oil prices. Moreover, management indicated that the company returned to profitability in June, which bodes well for continuing recovery into 2H.

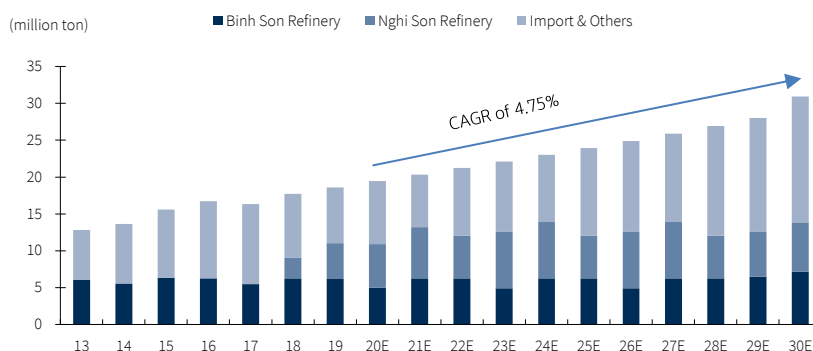
Pick up in gasoline & diesel should help 3Q operations but 4Q before any real turnaround

Recovery in global refinery demand should support 2H recovery and we expect 3Q earnings of VND605 billion or up 0.7% YoY (vs 2Q's VND1,898 billion loss). That said, 3Q results should still be weighed down by the two-month maintenance overhaul in August, which should lower the utilization ratio to 16%. The turnaround should come in 4Q when we expect earnings of VND684 billion (up 13% QoQ but down 57.2% YoY). Given the depth of 1H losses, however, 2H recovery should not be enough to bring full-year earnings into positive territory and we estimate VND2,957 billion in losses for the year.

CAGR at 17.5% after earnings normalize in 2021E

We estimate CAGR at 17.5% between 2021E and 2025E. Earnings performance should be better for 2021E at VND3,335 billion due to: 1) refinery product prices back at pre-pandemic and profitable levels; and 2) utilization ratios back to normal levels at 110%. We also assume on-time completion of the USD1.8 billion upgrading and expansion plan in 2022E despite current financing difficulties. The upgrade/expansion should: 1) boost total capacity by 30%; 2) upgrade facilities to complex refining from simple refining and diversify feedstock to both sour and sweet crude oil; and 3) increase the percentage of petrochemical products offering higher margins than refinery products.

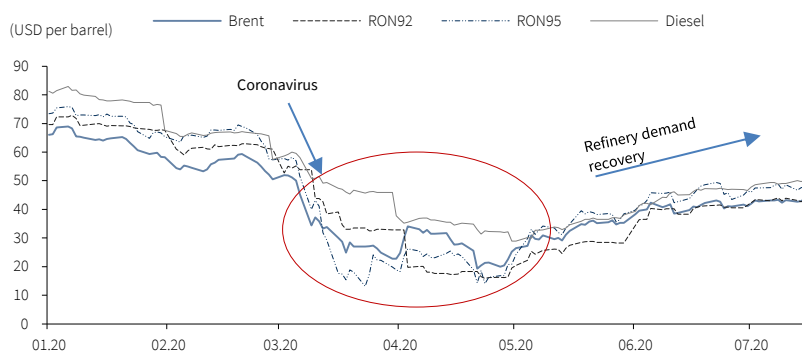
Fig 1. Binh Son Refinery (BSR) – Petroleum product output forecasts, 2013–2030E (million tons)



Source: Company reports, KB Securities Vietnam

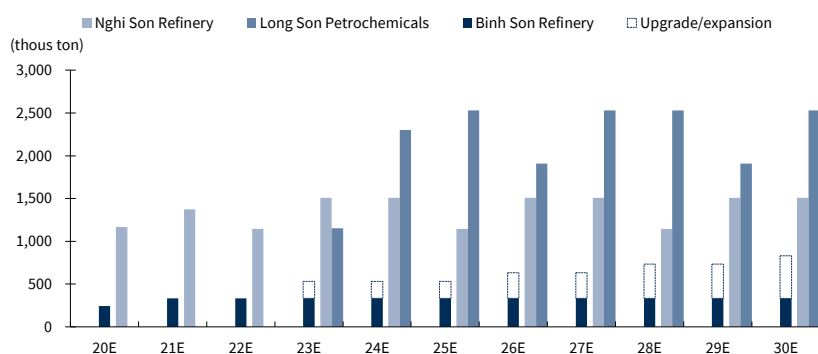
Fig 2. Binh Son Refinery (BSR) – Singapore RON 92, RON 95 & Diesel Oil ex-factory prices, Jan 2020–Jul 2020 (USD)

Refinery output price = Average MOPS 5, 10 or 15 days (number of days depends on buyers & contracts) + premium (negotiated)



Source: Bloomberg, KB Securities Vietnam

Fig 3. Binh Son Refinery (BSR) – Petrochemical output forecasts, 2013–2030E (thousand tons)



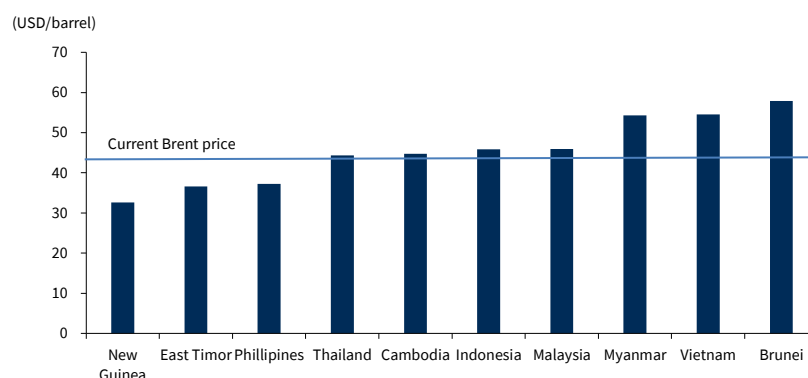
Source: Company reports, KB Securities Vietnam

Upstream vs downstream

Upstream companies hit harder as oil prices below breakeven lead to project delays and more production cuts

We expect oil prices at below Vietnam's USD55.00 breakeven to impact upstream companies more severely than downstream companies. Vietnam's production output already peaked for crude oil in 2015 and natural gas in 2018 and project delays are likely to continue as high extraction costs from Vietnam's mature oil and gas fields lead to additional production cuts. Weak oil prices are also delaying drilling and service contracts at major upstream customers in neighboring countries.

Fig 4. Southeast Asia oil & gas – Breakeven crude oil prices, 2019 (USD per barrel)



Source: Petrovietnam Group (PVN), KB Securities Vietnam

We expect crude oil and natural gas production to fall continuously but the outlook for gas improves dramatically if mega projects are approved

We expect oil production to continue its downward trend and fall by about 5% per year throughout our forecast period due to: 1) harder to extract reserves; 2) less promising outlook for new field discoveries; and 3) ongoing offshore tensions that make any restart of the *Red Emperor* project unlikely in the foreseeable future. Moreover, the stalled recovery in oil prices should extend production cuts for the remaining part of the year. Production volumes are also falling from existing natural gas fields but the approval of a few mega projects could trigger a multi-year boom for natural gas. Our natural gas production forecasts assume these new fields will face delays but inevitably come online.

Table 2. Vietnam oil & gas – Crude oil production & consumption forecasts, 2019–2030E (thousands of barrels per day, billion barrels, years)

Metrics/Year	19	20E	21E	22E	23E	24E	25E	26E	27E	28E	29E	30E
Production (thousand bbl/day)	224	201	201	191	181	172	163	155	147	140	133	126
Consumption (thousand bbl/day)	308	307	377	343	356	398	343	356	398	343	398	343
Proven reserves (billion barrels)	4.3	4.2	4.1	4.1	4.0	4.0	3.9	3.8	3.8	3.7	3.7	3.6
Reserves to production (years)	53	55	57	59	61	63	65	68	70	73	76	79

Source: ENI, KB Securities Vietnam

Table 3. Vietnam oil & gas – Natural gas production & consumption forecasts, 2019–2030E (billion cubic metres, years)

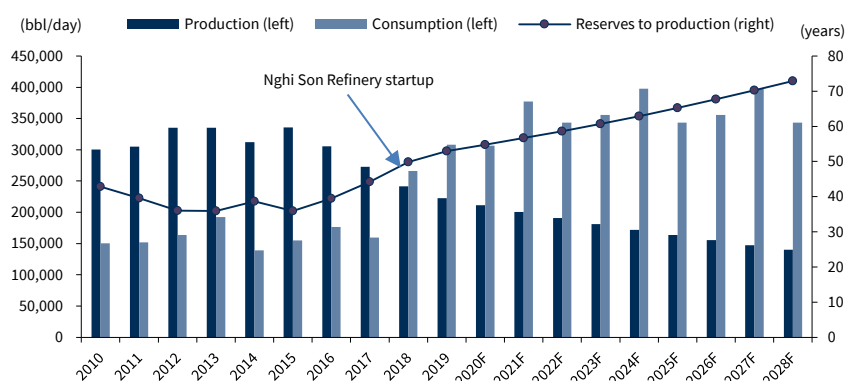
Metrics/Year	19	20E	21E	22E	23E	24E	25E	26E	27E	28E	29E	30E
Production (bcm)	10.3	10.1	10.5	11.4	12.6	19.9	25.8	29.3	30.1	29.6	29.1	28.5
Consumption (bcm)	10.3	10.1	14.3	18.3	19.5	26.8	39.6	57.1	59.4	60.2	61.1	66.6
Proven reserves (bcm)	718.0	707.9	697.4	686.0	673.4	653.5	627.8	598.5	568.4	538.8	509.7	481.2
Reserves to production (years)	70.0	70.2	66.5	60.0	53.5	32.9	24.4	20.5	18.9	18.2	17.5	16.9

Source: ENI, KB Securities Vietnam

Oil production at Vietnam's major oil fields peaked in 2015

Vietnam's major oil fields have reached maturity and production output has fallen continuously since 2015. The last big new oil discovery was the *Red Emperor* project in the *Nam Con Son* basin located off the southern shore that potentially offered 30 thousand barrels of crude oil per day and 0.62 billion cubic metres of gas per year. Drilling originally began in 2017 but was cancelled in March 2018 due to offshore tensions. This led to a sharp slowdown in exploration & production (E&P) activities and pushed Vietnam's upstream segment into a sunset era. Moreover, Vietnam's older fields have proven harder to extract reserves, which has led to a continual rise in the reserves to production over the past several years.

Fig 5. Vietnam oil & gas – Production, consumption & reserves to production forecasts, 2010–2028E (barrels per day, years)



Note: Historical consumption (2010–2019) = Production (P) + Import (M) – Export (X)

Source: General Statistics Office Vietnam, KB Securities Vietnam

Production output at existing fields to fall continuously

Bach Ho: Once Vietnam's largest and now only producing about 54.2 thousand barrels per day or 27% of Vietnam's total output. At its peak proven reserves were 3.7 billion barrels of crude oil and this field entered lower production from 2006 after 30 years of production. *Bach Ho* (White Tiger) is located in the *Cuu Long* basin located due south of the Mekong Delta and is operated by VietsovPetro (a joint venture between Vietnam and Russia).

Rang Dong: A smaller field that produces 12–15 thousand barrels per day or 6% of total crude oil output. Output was as high as 140,000 barrels per day when the field first started production over 20 years ago. The field is also located in the *Cuu Long* basin on *Block 15-2* and is operated by JX Nippon Oil & Energy Corporation at 46.5% ownership.

Su Tu: Now Vietnam's largest producer at 70.3 thousand barrels per day or 35% of total crude oil output. The cluster of fields is located in *Block 15-1* in the *Cuu Long* basin and operated by Cuu Long JOC. Major fields include *Su Tu Den* (Black Lion), *Su Tu Vang* (Yellow Lion), *Su Tu Trang* (White Lion) and *Su Tu Nau* (Brown Lion) with the entire area possessing 2 billion barrels of proven reserves.

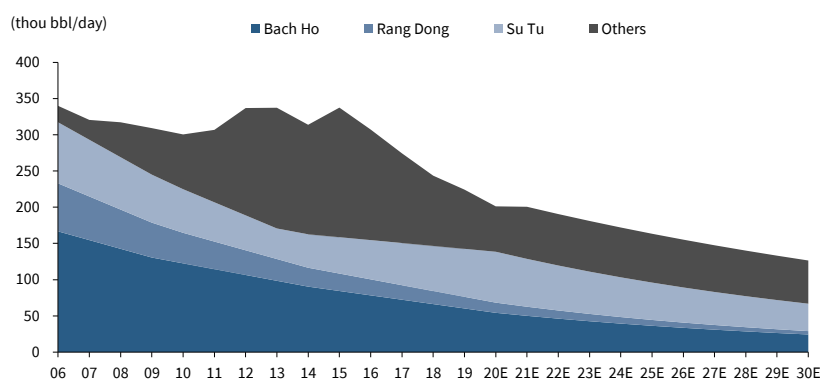
Other fields: Vietnam's other major fields generate about 62.7 thousand barrels per day or 31% of total output. Major fields include *Dai Hung*, *Hong Ngoc* (Ruby) and *Te Giac Trang* (White Rhino) that have been producing for more than 20 years. *Dai Hung* is located in the *Nam Con Son* basin off the southern shore and operated by PetroVietnam Exploration Production (PVEP), while *Te Giac Trang* is located in *Block 16-1* in the *Cuu Long* basin and operated by Hoang Long JOC.

Table 4. Vietnam oil & gas – Crude oil production by field, 2019–2030E (thousand barrels per day)

Field/year (thou bbl/day)	19	20E	21E	22E	23E	24E	25E	26E	27E	28E	29E	30E
Bach Ho	167	155	143	131	123	114	106	98	90	84	78	72
Rang Dong	66	60	54	48	42	38	34	30	26	24	22	20
Su Tu	84	78	72	66	60	54	48	42	46	50	54	58
Others	23	27	48	64	76	100	148	167	151	179	153	124
Total crude output	340	321	317	309	301	307	337	337	314	338	307	274

Source: KB Securities Vietnam

Fig 6. Vietnam oil & gas – Production output by field, 2006–2030E (thousands barrels per day)



Source: ENI, General Statistics Office Vietnam, KB Securities Vietnam estimates

Vietnam inevitably turning to more oil imports

Vietnam has inevitably turned to imports and became a net importer of oil in 2018 when the Nghi Son Refinery (NSR) entered commercial production using Kuwaiti oil feedstock. Unlike Binh Son Refinery's *Dung Quat* refinery that primarily uses locally-produced oil from the Bach Ho field, the Nghi Son Refinery exclusively uses imported Kuwaiti crude oil. The *Dung Quat* refinery has also started to diversify its feedstock this year and has also started use imported crude oil due to dwindling local reserves.

Fig 7. Vietnam oil & gas – Crude oil exports & imports, 2010–2019 (barrels per day)



Source: General Statistics Office Vietnam, KB Securities Vietnam

Natural gas fields also witnessing falling output

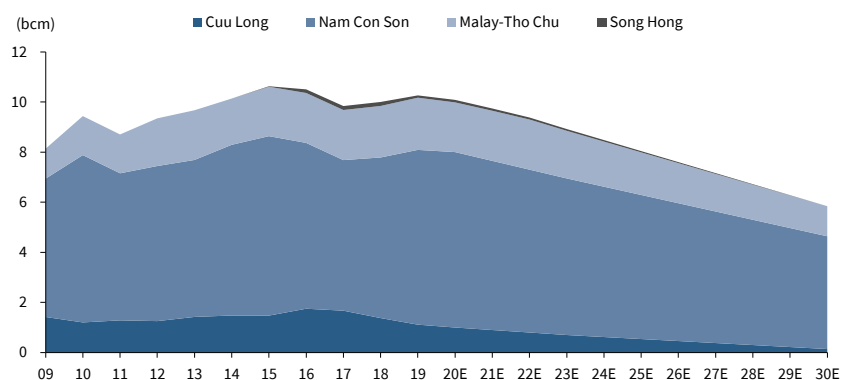
Vietnam's existing gas fields are also witnessing a similar situation of falling production volumes after peaking in 2018. We estimate that Vietnam's gas output could drop by almost half to 5.8 billion cubic metres from 10.1 billion cubic metres now by 2030E if no new major gas fields come online. Growing nationwide electricity demand – and adverse weather conditions in the southern regions that reduced reserves at hydroelectric power plants – forced Vietnam to increase natural gas output over the past several years to boost supply to gas-fired power plants. This led to overproduction at most gas fields that is now slowing production volumes at existing gas fields.

Table 5. Vietnam oil & gas – Gas production by basin (assuming no new fields), 2019–2030E (billion cubic metres)

Basins/years (bcm)	19	20E	21E	22E	23E	24E	25E	26E	27E	28E	29E	30E
Cuu Long	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.5	0.4	0.3	0.2	0.1
Nam Con Son	7.0	7.0	6.8	6.5	6.3	6.0	5.8	5.5	5.3	5.0	4.8	4.5
Malay-Tho Chu	2.1	2.0	2.0	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2
Song Hong	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total gas output	10.3	10.1	9.7	9.4	8.9	8.5	8.0	7.6	7.2	6.7	6.3	5.8

Source: KB Securities Vietnam

Fig 8. Vietnam oil & gas – Natural gas production by basis (assuming no new fields), 2019–2030E (billions of cubic metres)



Source: PV Gas, General Statistic Office Vietnam, KB Securities Vietnams

But the situation changes dramatically if the mega projects are approved

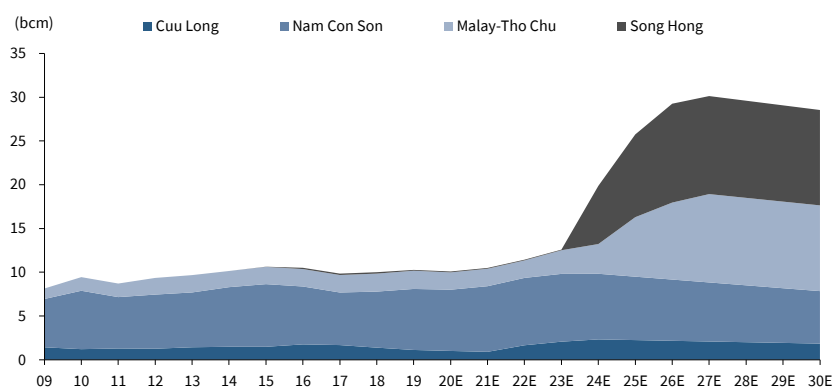
The *Ca Voi Xanh (Blue Whale)* & *Block B* mega projects are pending approval and the addition of these fields could almost triple natural gas production volumes to 28.5 billion cubic metres by the end of our forecast period in 2030E. The potential size of these projects are massive and could start another multi-year boom for natural gas.

Table 6. Vietnam oil & gas – Gas production by basin (assuming new fields), 2019–2030E (billion cubic metres)

Basins/years (bcm)	19	20E	21E	22E	23E	24E	25E	26E	27E	28E	29E	30E
Cuu Long	1.1	1.0	0.9	1.7	2.1	2.3	2.2	2.2	2.1	2.0	1.9	1.8
Nam Con Son	7.0	7.0	7.5	7.7	7.8	7.5	7.3	7.0	6.8	6.5	6.3	6.0
Malay–Tho Chu	2.1	2.0	2.0	2.0	2.7	3.4	6.8	8.8	10.1	10.0	9.9	9.8
Song Hong	0.1	0.1	0.1	0.1	0.1	6.7	9.5	11.3	11.2	11.1	11.0	10.9
Total gas output	10.3	10.1	10.5	11.4	12.6	19.9	25.8	29.3	30.1	29.6	29.1	28.5

Source: KB Securities Vietnam

Fig 9. Vietnam oil & gas – Natural gas production by basis (assuming new fields), 2019–2030E (billions of cubic metres)



Source: PV Gas, General Statistics Office, KB Securities Vietnam

The exact timing of these new mega fields remain uncertain due to repeated delays

Original applications were submitted as far back as 2015 with no results and we expect all of the new gas fields will experience delays. The projects should ultimately be approved given supply shortages for Vietnam power generation sector but only after at least one or two years of delays.

Blue Whale: The larger of the two mega projects is scheduled to begin operations in 2023E but we believe a 2024E startup is a more realistic time frame. The colossal field possesses around 150 billion cubic metres in proven reserves that could generate 9.7 billion cubic metres of natural gas per year. *Blue Whale* is located in the *Song Hong* basin off the north eastern shore and Exxon Mobil will act as the main investor and operator of the project.

Block B: This second mega project located in the *Malay–Tho Chu* basin off the southwest coast and may be able to startup operations by 2025E or two years behind schedule. The site has 176 billion in proven reserves but may only produce 7 billion cubic metres of natural gas per year. This will primarily be a local project managed by PetroVietnam Group (42.9% ownership), PVEP (26.8%), Moeco (22.5%) and PTTEP (7.7%).

Sao Vang–Dai Nguyet: Of the two fields, *Dai Nguyet* is scheduled for startup in 4Q20 and we expect *Sao Vang* may begin operations on time in 2022E. The fields have proven reserves of 16 billion cubic metres that could produce 1.5 billion cubic metres of gas per year. *Sao Vang–Dai Nguyet* is located in the Nam Con Son basin off the southern coast and is operated by Idemitsu Kosan (Japan).

Su Tu Trang Phase 2: *Su Tu Trang Phase 2* located in the *Cuu Long* basin should still begin operations at the end of 2021E or beginning of 2022E despite current delays arising from the coronavirus. Phase 2 will target 1.7 billion cubic metres of gas output per year.

Nam Du U Minh: *Nam Du U Minh* located in the *Malay Tho Chu* basin remains on track to produce 1.6 billion cubic metres of gas per year when it starts up in 2023E. This field is operated by Mitra Energy, a subsidiary of Jadestone Energy.

Mega projects could rejuvenate the upstream segment for PVS and PVD but too early to make this leap of faith

Launch of the gas mega projects would mark a major turnaround for upstream E&P operators like PVS and PVD but it may be premature to be overly optimistic at this time. The issues are complex and the approvals are also entangled in offshore tensions. In the meantime, fierce competition and low oil prices will likely continue to squeeze the margins at PVS and PVD. Potential deal flow may be limited to the smaller gas projects like *Sao Vang–Dai Nguyet*, *White Lion Phase 2* and *Nam Du U Minh*. But the *Blue Whale* and *Block B* mega projects continue to show risks of delay and are unlikely to start up on schedule. Project launches are likely to be limited to: October's 1.5 billion cubic metres of annual output from the *Dai Nguyet* project followed by 2021E's 0.6 billion cubic metres of output from the *White Lion Phase 2* project.

Table 7. Vietnam oil & gas – Natural gas E&P projects, 2018–2025E (USD)

Projects	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E
<i>Sao Vang Dai Nguyet</i>	EPC + FSO + JUs (USD600 mn)							
<i>White Lion Phase 2</i>			EPC + FSO (USD500 mn)					
<i>Nam Du - U Minh</i>			EPC + FSO (USD850 mn)					
<i>Blue Whale</i>			(Estimated investment value = USD10 billion)					
<i>Block B - O Mon</i>			EPC + FSO + 1 tender barge + 1 JUs (USD1.2 bn)					
<i>Red Emperor</i>	Suspended							

EPC = Engineering, Procurement & Construction; FSO = Floating, Storage & Offloading; JU = Jackup rigs

Note: Red Emperor (*Ca Rong Do*) suspended due to offshore tensions.

Source: Company reports, KB Securities Vietnam

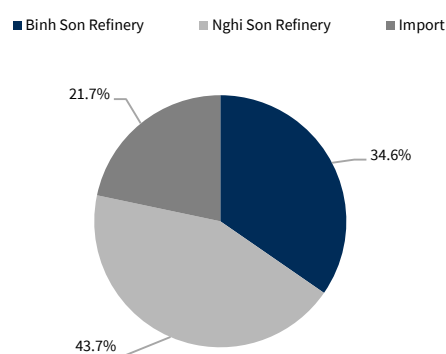
Downstream segments remain the bright spots in Vietnam's oil & gas industry

We believe the bright spots for Vietnam's oil & gas sector continue to be growing industrial and consumer demand in the downstream segments. But markets are young and data sparse. Importantly, major downstream players have dominant positions in key markets. BSR and NSR should benefit from growing consumer demand for gasoline and commercial demand for diesel. Both are also poised to capture growing industrial demand as Vietnam begins to localize petrochemical production. PLX has a dominant market position in retail distribution, with Vietnam's largest directly-owned gas station network. Its nationwide coverage is well positioned to capture the growth in consumer gasoline usage as the country narrows the gap in annual per-capita consumption against peers like Thailand and Indonesia.

BSR & NSR essentially share Vietnam's entire refining market with imports

BSR has 35% market share compared to NSR's 44% and the 22% of imports. Local capacity was stagnant before NSR began operations on May 2018 to become Vietnam's second refiner. BSR primarily focuses on refining products including liquefied petroleum gas (LPG), gasoline, diesel, kerosene/jet, fuel oil and a small amount of polypropylene. NSR's refining products include liquefied petroleum gas (LPG), gasoline, diesel, kerosene/jet fuel and fuel oil, while its petrochemical products include polypropylene, paraxylene and benzene.

Fig 10. Vietnam oil & gas – Refinery market share, 2020E (%)

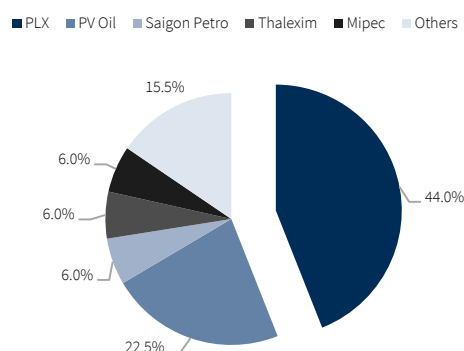


Source: Company reports, KB Securities Vietnam

PLX controls Vietnam’s largest gas station network

PLX controls 44% of Vietnam’s retail gasoline market with the country’s largest nationwide gas station network. PV Oil ranks second at 23% and is the only other operator offering nationwide coverage. Regional players include Saigon Petro focusing on the south-central coast and south-western areas; Thalexim operating in the *Binh Duong* province just north of Ho Chi Minh City containing an extremely important road network comprised of several of the country’s major highways; and Mipec the military gas station network operating in the northern region.

Fig 11. Vietnam oil & gas – Retail gasoline market share, 2020E (%)

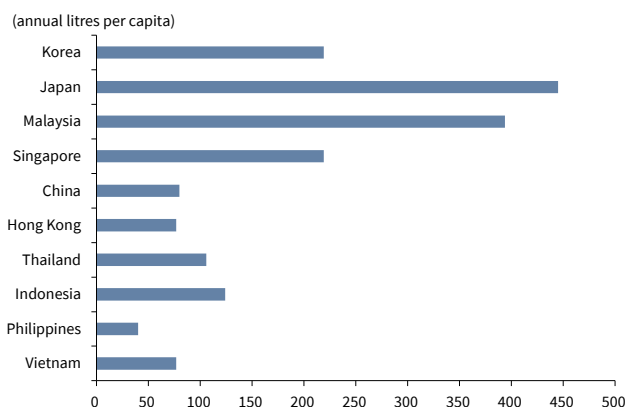


Source: Company reports, KB Securities Vietnam

Vietnam’s annual per-capita consumption of gasoline has plenty of room to grow

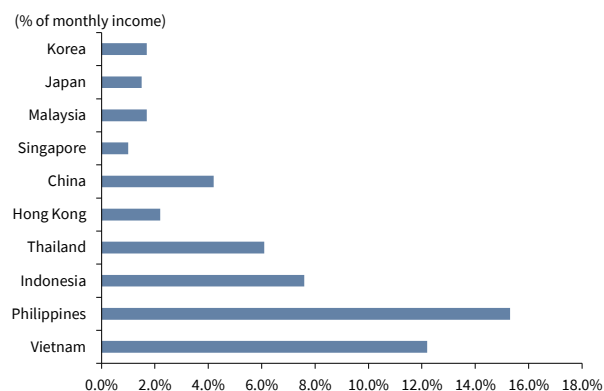
Vietnam’s annual per-capita consumption of gasoline was only 77 litres in 2019 compared to Thailand’s 106 litres and Indonesia’s 124 litres. Part of this disparity can be explained by respective fuel costs between countries, with Vietnam requiring 12% of monthly pay to fill a 40-litre tank of gasoline vs Thailand’s 6% and Indonesia’s 8%. This implies Vietnam’s growing income levels could narrow the gap in gasoline consumption to Southeast Asian peers.

Fig 12. Asia oil & gas – Annual per-capita gasoline consumption by country, 2019 (annual litres per capita)



Source: Global Petrol Prices, KB Securities Vietnam

Fig 13. Asia oil & gas – Percent of monthly income to fill 40-litre tank of gasoline, 2019 (%)

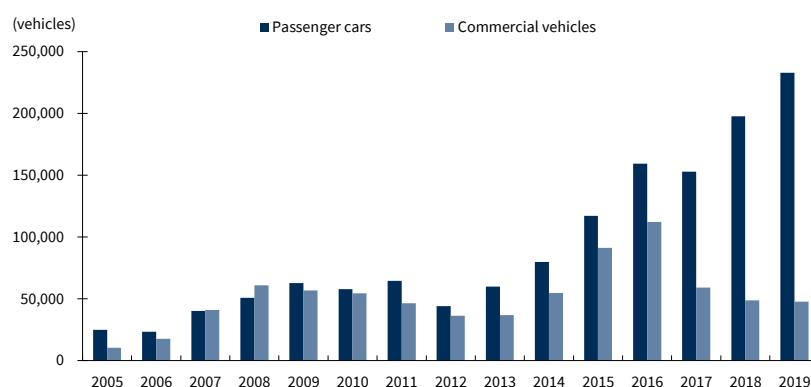


Source: Global Petrol Prices, KB Securities Vietnam

Vietnam's further motorization should also sustain growth for refiners and gas station operators

Vietnam is not a large market for automobile sales at just over 200,000 vehicles a year. But annual sales have been increasing for most years and could benefit more from August's start of the EU-Vietnam Free Trade Agreement (EVFTA) that will gradually reduce the 70% tariff on vehicles from the EU and make all car imports duty free after 10 years. No roadmap has been provided by the government yet as to whether the reduction in tariff will be reduced in increments of 7%–9% per year or whether the cut will occur in 2–3 year cycles for larger 15%–30% percentage-point cuts. Lower tariffs could have a similar impact to the pickup in annual sales witnessed after Vietnam reduced the import tariff by 10 percentage points to 50% from 60% in 2015 and to 40% in 2016 for cars imported from Southeast Asia as part of the Common Effective Preferential Tariff (CEPT) scheme for the ASEAN Free Trade Area (AFTA).

Fig 14. Vietnam automobiles – Passenger & commercial vehicles sales, 2005–2019 (number of vehicles sold)



Source: Vietnam Automobile Manufacturers' Association, KB Securities Vietnam

Vietnam will embark on local production of petrochemical products from 2023E

Vietnam will begin local production of petrochemical products when the Long Son Petrochemical plant completes construction in 2023E. Imports are still largely used to meet local demand and expanding production into petrochemicals opens a new market for Vietnam's refiners. The Long Son Petrochemical plant will primarily focus on polypropylene, ethylene production and is owned by Thailand's Siam Cement Group.

Table 8. Vietnam oil & gas – Refinery construction plans, 2009–2023E (barrels per day)

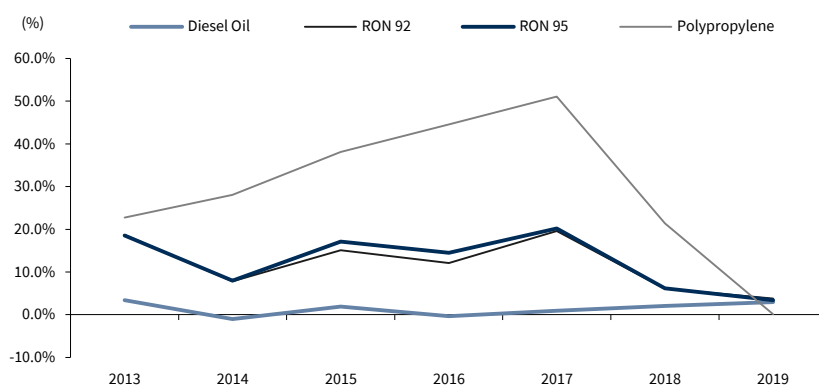
Location	Refinery name	Capacity (bbl/day)	Status	Startup date	Main owner	Note
Quang Ngai	Dung Quat	148,000	Active	2009	PetroVietnam (PVN)	Seeking expansion financing
Thanh Hoa	Nghi Son	200,000	Active	2018	PetroVietnam, Kuwait Petroleum, Idemitsu Kosan, Mitsui	
Ba Ria-Vung Tau	Long Son	na	Under construction	2023	Siam Cement Group	Mainly petrochemicals
Khanh Hoa	Nam Van Phong	200,000	Cancelled		Petrolimex	Switched to LNG Terminal
Phu Yen	Vung Ro	160,000	Cancelled		Vung Ro Petroleum Limited	
Binh Dinh	Nhon Hoi	400,000	Cancelled		PTT, Audi Aramco	

Source: Company reports, KB Securities Vietnam

BSR also beginning to divert investments into petrochemicals

New facilities are scheduled to start commercial operations in 2023E and boost BSR’s modest polypropylene output by 30%. We strongly believe this initial step is significant and marks the beginning of a much more substantial push into petrochemicals alongside the country’s sizable investments into LNG. Despite polypropylene representing a marginal 2.5% of total output, the contribution of petrochemicals has averaged about 16% of BSR’s gross profit between 2018 and 2019. Superior margins to refining products has also provided higher contributions in the past.

Fig 15. Binh Son Refinery (BSR) – Gross margin by refinery products, 2013-2019 (%)

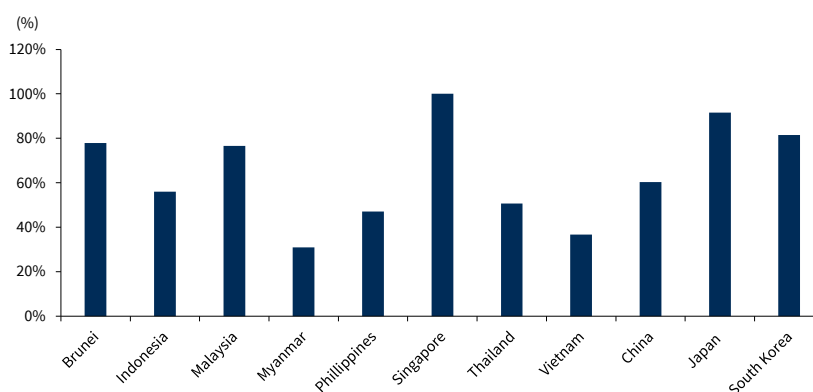


Source: Company reports, KB Securities Vietnam

Vietnam’s low urbanization should drive multi-decade demand for petrochemicals

Low urbanization underscores the need for domestic petrochemical producers to satisfy construction demand to consumer demand. Currently, Vietnam imports almost all of its petrochemical needs. Importantly, Vietnam’s emerging ability to import LNG will provide an important feedstock needed to build local petrochemical facilities.

Fig 16. Asia – Urbanization rate, 2019 (%)



Source: World Bank

Binh Son Refinery (BSR) – Three-stage dividend discount model

3-STAGE DDM																																																																																							
PV OF DIVIDENDS																																																																																							
		Sustainable growth																																																																																					
Cost of Equity		1.7%	2.2%	2.7%	3.2%	3.7%	4.2%	4.7%																																																																															
14.1%	37,138	38,320	39,605	41,008	42,546	44,239	46,112																																																																																
14.6%	35,108	36,165	37,310	38,556	39,916	41,407	43,048																																																																																
15.1%	33,250	34,198	35,222	36,332	37,540	38,859	40,304																																																																																
15.6%	31,544	32,397	33,316	34,309	35,386	36,557	37,835																																																																																
16.1%	29,975	30,744	31,571	32,462	33,425	34,469	35,605																																																																																
16.6%	28,527	29,223	29,970	30,771	31,635	32,569	33,581																																																																																
17.1%	27,189	27,821	28,496	29,219	29,997	30,835	31,740																																																																																
PV OF EQUITY PER SHARE																																																																																							
		Sustainable growth																																																																																					
Cost of Equity		1.7%	2.2%	2.7%	3.2%	3.7%	4.2%	4.7%			Ex-growth																																																																												
14.1%	12,000	12,400	12,800	13,200	13,700	14,300	14,900				0.5x																																																																												
14.6%	11,300	11,700	12,000	12,400	12,900	13,400	13,900				5,100																																																																												
15.1%	10,700	11,000	11,400	11,700	12,100	12,500	13,000				-13.6%																																																																												
15.6%	10,200	10,400	10,700	11,100	11,400	11,800	12,200				Mid-cycle																																																																												
16.1%	9,700	9,900	10,200	10,500	10,800	11,100	11,500				0.8x																																																																												
16.6%	9,200	9,400	9,700	9,900	10,200	10,500	10,800				8,100																																																																												
17.1%	8,800	9,000	9,200	9,400	9,700	9,900	10,200				37.3%																																																																												
Projected Distributions (VNDbn)																																																																																							
	2015A	2016A	2017A	2018A	2019A	2020E	2021E	2022E	2023E	2024E	2025E																																																																												
Net income	6,176	4,483	7,711	3,606	2,914	-2,942	3,355	3,705	4,280	5,244	6,386																																																																												
Preferred dividend paid – cash	0	0	0	0	0	0	0	0	0	0	0																																																																												
Preferred dividend per share	0	0	0	0	0	0	0	0	0	0	0																																																																												
% of par value	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%																																																																												
Internally-generated capital	6,176	4,483	7,711	3,606	2,914	-2,942	3,355	3,705	4,280	5,244	6,386																																																																												
Less: capital @ 20% D/E	-5,017	-579	-451	-819	-767	458	118	445	322	3	3																																																																												
Cash for dividends/buybacks	11,193	5,062	8,161	4,425	3,680	0	3,237	3,260	3,958	5,241	6,383																																																																												
Common dividend paid – cash	0	0	0	0	508	0	496	1,240	1,488	1,860	2,480																																																																												
Common dividend per share	0	0	0	0	164	0	160	400	480	600	800																																																																												
% of par value	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	1.6%	4.0%	4.8%	6.0%	8.0%																																																																												
Payout ratio	0.0%	0.0%	0.0%	0.0%	17.4%	0.0%	14.8%	33.5%	34.8%	35.5%	38.8%																																																																												
Net share buybacks	0	0	713	0	0	0	0	0	0	0	0																																																																												
Total distributions	0	0	713	0	508	0	496	1,240	1,488	1,860	2,480																																																																												
Net distribution ratio (%)	0.0%	0.0%	9.3%	0.0%	17.4%	0.0%	14.8%	33.5%	34.8%	35.5%	38.8%																																																																												
Discount factor	0.00	0.00	0.00	0.00	0.00	1.08	1.25	1.44	1.67	1.93	2.23																																																																												
Present value	0	0	0	0	0	0	398	861	893	966	1,114																																																																												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Cost of equity</th> <th colspan="3">Terminal Assumptions</th> <th colspan="5">Share Information</th> </tr> </thead> <tbody> <tr> <td>Risk free rate</td> <td>3.0%</td> <td colspan="3">Sustainable ROE</td> <td colspan="2">8.0%</td> <td colspan="2">PV of future dividend flows (VNDbn)</td> <td colspan="2">4,231</td> </tr> <tr> <td>Equity risk premium</td> <td>8.9%</td> <td colspan="3">Dividend payout ratio</td> <td colspan="2">60.0%</td> <td colspan="2">PV of terminal value (VNDbn)</td> <td colspan="2">30,078</td> </tr> <tr> <td>Unlevered beta</td> <td>1.221</td> <td colspan="3">Sustainable growth</td> <td colspan="2">3.2%</td> <td colspan="2">Terminal value as % of firm value</td> <td colspan="2">87.7%</td> </tr> <tr> <td>Re-levered beta</td> <td>1.417</td> <td colspan="3">Forecast period growth</td> <td colspan="2">49.5%</td> <td colspan="2">Current shares outstanding (mn)</td> <td colspan="2">3,100.5</td> </tr> <tr> <td>Cost of equity</td> <td>15.6%</td> <td colspan="3">Target gearing</td> <td colspan="2">20.0%</td> <td colspan="2">Statutory corporate tax rate</td> <td colspan="2">20.0%</td> </tr> <tr> <td>Forecast period</td> <td>5 Yrs</td> <td colspan="3">Transition period</td> <td colspan="2">10 Yrs</td> <td colspan="5"></td> </tr> </tbody> </table>												Cost of equity	Terminal Assumptions			Share Information					Risk free rate	3.0%	Sustainable ROE			8.0%		PV of future dividend flows (VNDbn)		4,231		Equity risk premium	8.9%	Dividend payout ratio			60.0%		PV of terminal value (VNDbn)		30,078		Unlevered beta	1.221	Sustainable growth			3.2%		Terminal value as % of firm value		87.7%		Re-levered beta	1.417	Forecast period growth			49.5%		Current shares outstanding (mn)		3,100.5		Cost of equity	15.6%	Target gearing			20.0%		Statutory corporate tax rate		20.0%		Forecast period	5 Yrs	Transition period			10 Yrs						
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Forecast period	5 Yrs	Transition period			10 Yrs																																																																																		
Memorandum (VNDbn)																																																																																							
	2015A	2016A	2017A	2018A	2019A	2020E	2021E	2022E	2023E	2024E	2025E																																																																												
Reported common equity	31,747	32,884	34,358	31,378	34,054	30,960	33,836	36,320	39,133	42,543	46,481																																																																												
Debt/equity ratio	61.0%	50.1%	41.4%	32.3%	18.5%	27.7%	27.1%	31.4%	33.3%	30.6%	28.1%																																																																												
Debt	19,374	16,479	14,226	10,131	6,299	8,588	9,178	11,402	13,012	13,028	13,044																																																																												
YoY % Change	-56.4%	-14.9%	-13.7%	-28.8%	-37.8%	36.3%	6.9%	24.2%	14.1%	0.1%	0.1%																																																																												

Source: Company reports, KB Securities Vietnam

Binh Son Refinery (BSR) – Summarized financials & forecasts, 2019–2022E

Income statement (VNDbn)					Balance sheet (VNDbn)				
	2019A	2020E	2021E	2022E		2019A	2020E	2021E	2022E
Net sales	102,824	61,429	90,819	95,360	Total assets	53,584	49,930	56,268	61,602
Cost of sales	98,851	63,288	85,692	89,759	Current assets	26,896	24,198	31,840	37,028
Gross Profit	3,973	(1,859)	5,127	5,601	Cash & equivalents	8,352	2,982	8,077	8,065
Financial income	537	627	473	473	ST investments	4	2	3	5
Financial expenses	416	828	989	1,051	Accounts receivable	9,972	7,774	10,106	10,612
of which: interest expenses	360	355	386	449	Inventory	8,515	13,302	13,475	18,158
Gain/(loss) from joint ventures	0	0	0	0	Other current assets	52	138	180	189
Selling expenses	714	667	908	954	Long-term assets	26,688	25,732	24,428	24,574
General & admin expenses	389	173	156	150	LT trade receivables	534	777	1,011	1,061
Operating profit/(loss)	2,990	(2,901)	3,547	3,919	Fixed assets	24,848	24,568	22,649	22,759
Other income	69	35	54	56	Investment properties	0	0	0	0
Other expense	4	2	3	4	LT incomplete assets	1,026	58	344	309
Net other income/(expenses)	65	33	50	53	LT investments	10	11	11	11
Pretax profit/(loss)	3,054	(2,868)	3,598	3,972	Goodwill	0	0	0	0
Income tax	181	89	225	249	Other LT assets	271	318	413	434
Net profit/(loss)	2,873	(2,957)	3,372	3,723	Liabilities	19,530	18,970	22,432	25,283
Minority interests	(41)	(15)	17	19	Current liabilities	12,916	11,932	14,185	15,327
Net profit after MI	2,914	(2,942)	3,355	3,705	Trade accounts payable	8,674	4,640	5,854	6,121
					Advances from customers	4	6	8	9
					ST borrowings	1,106	3,617	3,617	4,267
					Special reserves	120	215	215	215
					Other current liabilities	3,012	3,455	4,492	4,716
					Long-term liabilities	6,614	7,037	8,247	9,955
					LT payables	0	0	0	0
					LT borrowings	5,192	4,971	5,561	7,135
					Other LT liabilities	1,422	2,066	2,686	2,820
					Shareholders' equity	34,054	30,960	33,836	36,320
					Paid-in capital	31,005	31,005	31,005	31,005
					Share premium	0	0	0	0
					Treasury stock	0	0	0	0
					Undistributed earnings	2,975	(95)	2,781	5,264
					Reserve & others	3	3	3	3
					Minority interests	71	48	48	48
					Total liabilities & equity	53,584	49,930	56,268	61,602
Operating ratios (%)					Key ratios (x, %, VND)				
	2019A	2020E	2021E	2022E		2019A	2020E	2021E	2022E
Revenue growth	(8.2)	(40.3)	47.8	5.0	Valuations				
EBIT growth	(27.4)	(194.1)	(250.5)	10.7	P/E	6.1	(6.0)	5.3	4.8
EBITDA growth	(21.5)	(110.7)	nm	5.2	P/E diluted	6.1	(6.0)	5.3	4.8
NP after MI growth	(19.2)	(201.0)	(214.0)	10.4	P/B	0.5	0.6	0.5	0.5
Gross profit margin	3.9	(3.0)	5.6	5.9	P/S	0.2	0.3	0.2	0.2
EBITDA margin	5.2	(0.9)	7.3	7.3	EV/EBITDA	3.3	(31.2)	2.7	2.5
EBIT margin	2.8	(4.4)	4.5	4.7	EV/EBIT	6.2	(6.5)	4.3	3.9
Pre-tax profit margin	3.0	(4.7)	4.0	4.2	Dividend yield, ordinary (%)	2.9	0.0	2.8	7.0
Net profit margin	2.8	(4.8)	3.7	3.9	EPS	940	(949)	1,082	1,195
					BVPS	10,983	9,986	10,913	11,714
					SPS	33,164	19,813	29,292	30,756
					DPS (annual, ordinary)	164	0	160	400
					Dividend payout ratio (%)	17.4	0.0	14.8	33.5
Cash flow (VNDbn)					Operating performance				
	2019A	2020E	2021E	2022E		2019A	2020E	2021E	2022E
Net profit	2,873	(2,957)	3,372	3,723	ROE	8.9	-9.1	10.4	10.6
Plus: depreciation & amort	2,513	2,227	2,593	2,505	ROA	5.5	-5.7	6.3	6.3
Plus: investing (profit)/loss	(340)	(352)	(351)	(351)	ROIC	8.1	-8.3	11.0	11.7
Change in working capital	1,166	(6,508)	(527)	(4,755)	Financial structure				
(Inc)/dec – receivables	(1,019)	1,954	(2,565)	(556)	Total liab/equity	57.4	61.3	66.3	69.6
(Inc)/dec – inventory	711	(4,787)	(173)	(4,683)	Net debt/equity	(6.0)	18.1	3.3	9.2
(Inc)/dec – other curr assets	27	(87)	(41)	(9)	Current ratio (x)	2.1	2.0	2.2	2.4
Inc/(dec) – payables	205	(4,034)	1,214	267	Interest coverage (x)	8.0	(7.6)	10.5	10.0
Inc/(dec) – advances	(9)	2	2	1	Activity ratios				
Inc/(dec) – other curr liab	1,252	443	1,037	225	Asset turnover	1.9	1.2	1.7	1.6
Other adj for operations	2,916	(3,912)	(448)	1,544	Receivables turnover	10.9	6.9	10.2	9.2
Operating cash flow	4,937	(6,178)	5,320	1,368	Inventory turnover	11.6	5.6	6.8	6.0
ST investments	0	2	(1)	(2)	Payables turnover	12.0	9.2	17.3	15.9
Capital expenditures	(13)	(884)	(960)	(2,580)					
Investment properties	0	0	0	0					
Investment in subsidiaries	0	0	0	0					
Other assets	77	(48)	(95)	(21)					
Other adj for investments	(7)	435	546	546					
Investing cash flow	57	(495)	(511)	(2,057)					
Free cash flow	4,924	(7,062)	4,360	(1,213)					
Issuance/(repayment) of debt	(2,123)	(221)	590	1,574					
ST debt	(1,710)	2,511	0	650					
Other liabilities	3	645	620	134					
Issuance/(retirement) of equity	0	0	0	0					
Dividends paid	(508)	0	(496)	(1,240)					
Less: changes in equity	311	(136)	0	0					
Other adj for financing	1,623	(1,495)	(428)	(440)					
Financing cash flow	(2,404)	1,302	286	678					
Net increase in cash & equivalents	2,590	(5,371)	5,095	(12)					
Cash & equivalents – beginning	5,762	8,352	2,982	8,077					
Cash & equivalents – ending	8,352	2,982	8,077	8,065					

Source: Company reports, KB Securities Vietnam

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Investment ratings & definitions

Investment Ratings for Stocks

(based on expectations for absolute price gains over the next 6 months)

Buy:	Hold:	Sell:
+15% or more	+15% to -15%	-15% or more

Investment Ratings for Sectors

(based on expectations for absolute price gains over the next 6 months)

Positive:	Neutral:	Negative:
Outperform the market	Perform in line with the market	Underperform the market

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