BofA SECURITIES

Refiners

Ref Con 2024: second part to the Regional Golden Age: upgrade VLO, PBF, DINO

Rating Change

15 March 2024

Equity
United States
Oils

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Second stage in the 'Regional Golden Age': 'good' volatility

In Aug 2023 we took a strategic pause on our constructive refining sector view pending questions we believed needed answered in order to assess whether margins had over-extended ahead of 'normal' seasonal risks. With the US refining system entering its 3rd seasonal cycle post-COVID, several repeating factors lead us to suggest the magnitude of what constitutes a higher, sustainable mid-cycle vs the prior 10yr view is still playing out & risked higher vs our base case. At the time of writing, 2024 is headed for another above mid-cycle year with summer tailwinds well understood: but with another mild winter on the books, we see volatility in heat cracks introducing another upward reset in mid-cycle margins supported by industry feedback from Ref Con 24, now on the books.

Higher highs, higher lows, higher mid cycle: $12.5 GC 321

The starting point for our RGA thesis was an exaggerated summer margin premium for low RVP gasoline. However, we see a new secondary dynamic emerging for winter distillate that has shown repeated, outsize volatility that we believe can lift avg. realized margins for US refiners. The current forward curve risks our prior 2024 margin assumptions higher: that said, we continue to lean conservative on how this plays out 'mid cycle'. Over the past two years winter heat cracks have traded 50%-100% above pre-COVID levels; at the low end of this range a $10 - $15 higher average heat crack for the 3 months of winter adds $1 to our mid cycle margin assumption, which moves from $11.50 to $12.50/bbl (see page 5). Recognizing that this is fraught with imprecision, we test the consequence on FcF of the US refiners – adding 30% to DCF based values.

Arguments for a rerating: upgrade VLO, PBF, DINO to Buy

From a valuation standpoint, wider margin volatility for a single year has limited impact on value, but if we consider a sustainable increase in mid-cycle earnings, we believe the conditions for another step up in absolute valuations for US refiners is in place. With this backdrop, we reinstate our constructive view of the US refining sector, raising price targets on average by 25%. However, we also present arguments to reset absolute values that recognizes asset duration vs E&Ps in particular and lower equity volatility as balance sheets are reset and free cashflow has greater resilience at cyclical lows. With that said we lean towards 'pure play exposure to differentiate stock selection. With our bias towards where we see greatest relative value. VLO, DINO and PBF move to Buy.

Ticker	Current Rating	Prior Rating	New PO	Prior PO
PBF	Buy	Neutral	74	52
VLO	Buy	Neutral	210	156
DINO	Buy	Neutral	78	62
MPC	Neutral	Neutral	225	185
PSX	Neutral	Neutral	180	150
DK	Neutral	Neutral	32	30

What if we're wrong? Seasonal tailwinds mitigate risk

New term momentum provides tailwinds that frankly will allow the market to monitor whether our thesis of 'repeatable' higher highs and higher lows is reasonable. Summer is dominated by gasoline – and with the tightness in US octane and expected premium on lower RVP feedstock we see earnings momentum for the broader sector risked higher. As always investors may see logic in a strategic pause as summer ends with one eye on the timing and scale of new refinery additions ex US that will inevitably influence sector sentiment until 'known unknowns' play out. But for the next seasonal phase of elevated refining volatility, we believe upside risk to mid cycle and tailwinds from another round of earnings revisions sees the US refiners favorably positioned for at least the next period of seasonal gasoline strength.

IMO: International Maritime Organization

RVP: Reid Vapor Pressure

Timestamp: 15 March 2024 06:00AM EDT

Contents

Regional Golden Age: volatility matters

Higher highs, higher lows means higher mid cycle

In August 2023 we took a strategic pause on our constructive refining sector view, that argued a combination of lower costs vs international peers (natural gas) and a tighter US market in the wake of material US capacity closures could lift mid cycle margins above historical levels. There are similarities with the 'Golden Age' call of the mid-2000s when global underinvestment across the broader energy industry impacted *global* margins. However, we continue to believe the mix of net capacity closures, discounted natural gas costs and abundant regional feedstock makes this a uniquely regional phenomenon that is still playing out. Further, a complex regulatory environment is exacerbating seasonal volatility amidst stable demand and aspirational targets for an energy transition that has stalled material capacity expansion.

We see the outcome as one where price discovery of what constitutes the new mid-cycle for US refiners is still playing out and risked higher versus our base case amidst wider upside volatility.

Two years ago, we redefined this outlook as the 'Regional Golden Age' of refining (RGA). After a period of significant sector outperformance, we took the position that while the broader sector thesis was playing out, a number of questions still needed answered in order to assess whether margins had overextended. Put differently we aimed to look past transitory summer margin strength towards a view of what is a reasonable basis for the sustainable mid-cycle. Seasonal risks will remain part of the refining cycle.

At the time of writing, 2024 looks headed for another above mid-cycle year

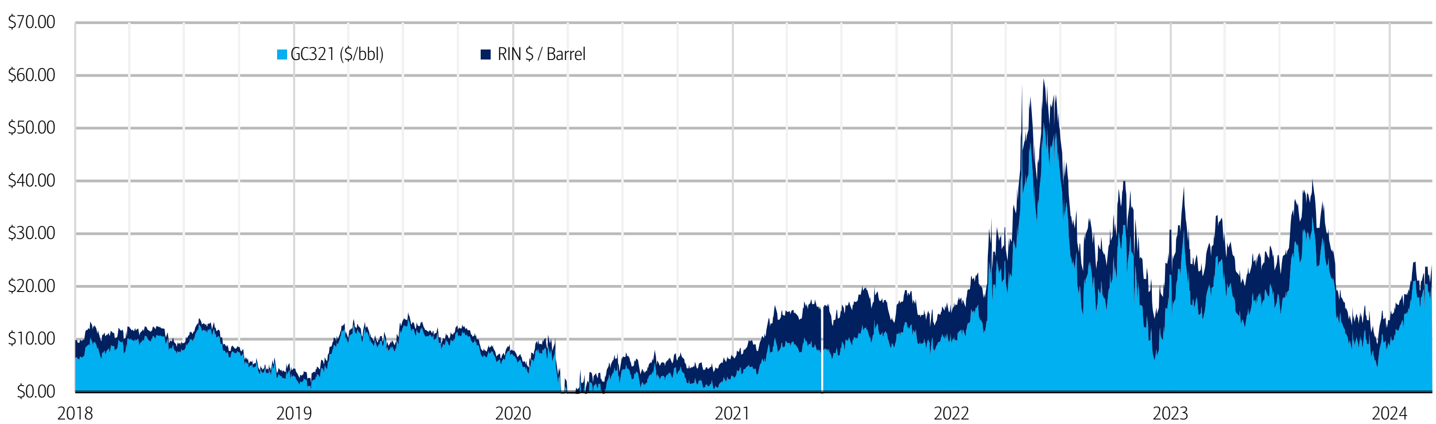
But with the US refining system entering its 3rd seasonal cycle post-COVID, several repeating factors lead us to suggest the magnitude of what constitutes a higher, sustainable mid-cycle versus the prior 10yr view is still playing out. With another mild winter on the books, we see the net outcome of exacerbated summer margin strength augmented with similar volatility in winter that introduces another upward reset in the mid-cycle margin outlook, which is how we define the sustainable earnings capacity for the sector.

Higher highs, higher lows means higher averages

Raising mid cycle to $12.5 GC 321 (Brent)

The starting point for our RGA thesis was an exaggerated summer margin premium for low RVP gasoline, a consequence of recovering gasoline demand versus reduced US reforming capacity that has dropped 316,000 b/d (8%) from pre-COVID levels.

Exhibit 1: Margin volatility has been reset with accelerated refinery closures during COVID
NYMEX 321 ex-RIN Crack



Source: BofA Global Research

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However, we see a new secondary dynamic emerging - this time for winter distillate that has shown repeated, outsize volatility that we attribute to the permanent closure of 465,000 bpd of East Coast refining capacity that has crimped domestic availability in the critical PADD 1 heating market. Those barrels are not coming back. Assuming pre-winter inventory builds require pricing that pulls barrels North ahead of winter, we believe it is reasonable to assume outsize seasonal strength in distillate margins is a new normal that can lift average annual realized margins for US refiners.

With that said, we continue to lean conservative on how we see this ultimately playing out. But on the simple idea that amidst a tighter market that induces higher seasonal (summer) highs anchored on gasoline, and higher seasonal (winter) lows anchored on distillate, we believe the new normal for average margins is still risked higher and rationalized below.

With this report we move our view of mid cycle GC 321 Brent crack to $12.50 (+$1.00), with key regional inputs below.

Exhibit 2: Key Refining benchmarks
2024: $14.2 Gulf Coast 321, above mid-cycle; 2025: $12.50 Gulf Coast 321, mid-cycle

	2018 YEAR	2019 YEAR	2020 YEAR	2021 YEAR	2022 YEAR	2023 YEAR	2024 Q1A	2024 Q2A	2024 Q3	2024 Q4	2024 YEAR	2025 Q1A	2025 Q2A	2025 Q3	2025 Q4	2025 YEAR
Gulf Coast 321 (WTI)	$14.5	$15.5	$6.7	$11.3	$27.3	$20.7	$19.4	$22.0	$20.0	$15.5	$19.2	$16.0	$18.5	$19.5	$16.0	$17.5
Brent Basis	$8.7	$7.9	$3.3	$8.9	$21.9	$16.2	$14.4	$17.0	$15.0	$10.5	$14.2	$11.0	$13.5	$14.5	$11.0	$12.5
PADD 1 321 (Brent)	$11.4	$11.8	$7.5	$9.1	$23.6	$18.5	$12.8	$17.4	$15.4	$11.1	$14.2	$11.6	$14.0	$15.0	$11.6	$13.0
PADD 2 321 (WTI)	$15.0	$15.5	$6.2	$10.4	$23.4	$23.0	$12.4	$22.6	$20.7	$16.4	$18.0	$16.9	$19.3	$20.2	$16.9	$18.3
PADD 3 321 (WTI)	$13.2	$14.3	$5.5	$7.9	$21.5	$18.0	$18.6	$20.1	$18.3	$14.1	$17.8	$14.6	$16.9	$17.8	$14.6	$16.0
PADD 5 321 (ANS)	$14.0	$17.5	$11.3	$20.5	$31.7	$32.1	$22.6	$27.5	$25.3	$20.3	$23.9	$20.9	$23.6	$24.7	$20.9	$22.5
WTI-Brent	($5.7)	($7.6)	($3.4)	($2.5)	($5.4)	($5.1)	($5.0)	($5.0)	($5.0)	($5.0)	($5.0)	($5.0)	($5.0)	($5.0)	($5.0)	($5.0)
WTI-LLS	($5.0)	($5.7)	($2.1)	($1.5)	($2.0)	($2.5)	($1.5)	($1.5)	($1.5)	($1.5)	($1.5)	($1.5)	($1.5)	($1.5)	($1.5)	($1.5)
LLS-Brent	($1.3)	($1.3)	($0.8)	($1.0)	($3.4)	($2.1)	($3.5)	($3.5)	($3.5)	($3.5)	($3.5)	($3.5)	($3.5)	($3.5)	($3.5)	($3.5)
Mars-Brent	($4.6)	($3.2)	($2.0)	($3.3)	($8.2)	($5.0)	($4.5)	($4.5)	($4.5)	($4.5)	($4.5)	($4.5)	($4.5)	($4.5)	($4.5)	($4.5)
Maya-Brent	($8.7)	($6.4)	($5.5)	($6.1)	($12.6)	($13.3)	($10.3)	($10.6)	($10.6)	($10.3)	($10.4)	($10.2)	($10.3)	($10.3)	($10.2)	($10.3)
WCS-WTI	($26.3)	($13.6)	($11.8)	($13.6)	($19.5)	($17.9)	($22.3)	($16.0)	($16.0)	($16.0)	($17.6)	($15.0)	($15.0)	($15.0)	($15.0)	($15.0)
Midland-WTI	($7.5)	($0.7)	$0.3	$0.5	$1.3	$1.2	$1.0	$1.0	$1.0	$1.0	$1.0	$1.0	$1.0	$1.0	$1.0	$1.0
Midland-LLS	($12.5)	($6.4)	($1.8)	($1.0)	($0.7)	($1.2)	($0.5)	($0.5)	($0.5)	($0.5)	($0.5)	($0.5)	($0.5)	($0.5)	($0.5)	($0.5)
MEH - Midland	($7.9)	($5.0)	($0.7)	($0.3)	($2.6)	($1.1)	$0.5	$0.5	$0.5	$0.5	$0.5	$0.5	$0.5	$0.5	$0.5	$0.5

Source: BofA Global Research, Bloomberg

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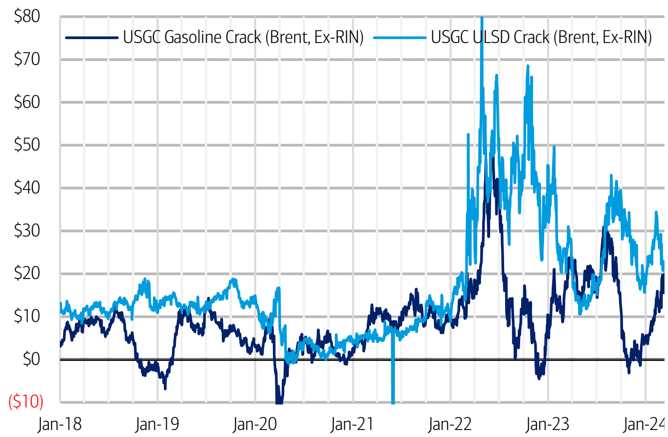
With this backdrop we reinstate our constructive view of the US refining sector, raising price targets on average by 25% on another incremental increase in our mid cycle refining margin view and acknowledging that free cashflow volatility for an annuity asset class demands a commensurate reset in our relative sector view vs E&P's.

Distillate supporting higher mid-cycle margins

Over the past two years distillate margins have traded 50% - 100% above prior mid cycle averages.

To be clear there are multiple factors that have contributed to outsize distillate strength - distillate rich crudes trading above lighter barrels, a consequence of both OPEC cuts, freight disruptions in the Red Sea and reduced Russian distillate imports. While some of these may be transitory, there have also been structural shifts such as the step change in 'clean' distillate product specifications, led by IMO (2022) that have contributed to distillate strength, in addition to the capacity reductions mentioned above.

Exhibit 3: Diesel margin volatility
NYMEX ex-RIN refining margin



Source: Bloomberg, BofA Global Research

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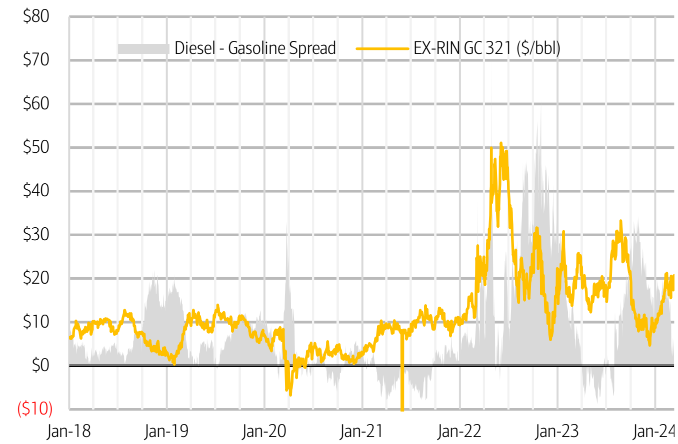
Exhibit 4: Gasoline margin volatility
NYMEX ex-RIN refining margin



Source: Bloomberg, BofA Global Research

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Recognizing that this is fraught with imprecision, we test the consequence on the earnings power, free cashflow and valuation of the US refiners,

- our starting point adds $1 to our prior mid cycle estimate of $11.50 on a Brent GC 321 basis (ex-RIN) – equivalent to $10-$15 higher distillate margins for 3 months of winter which is at the low end of recent incremental winter volatility vs prior norms.

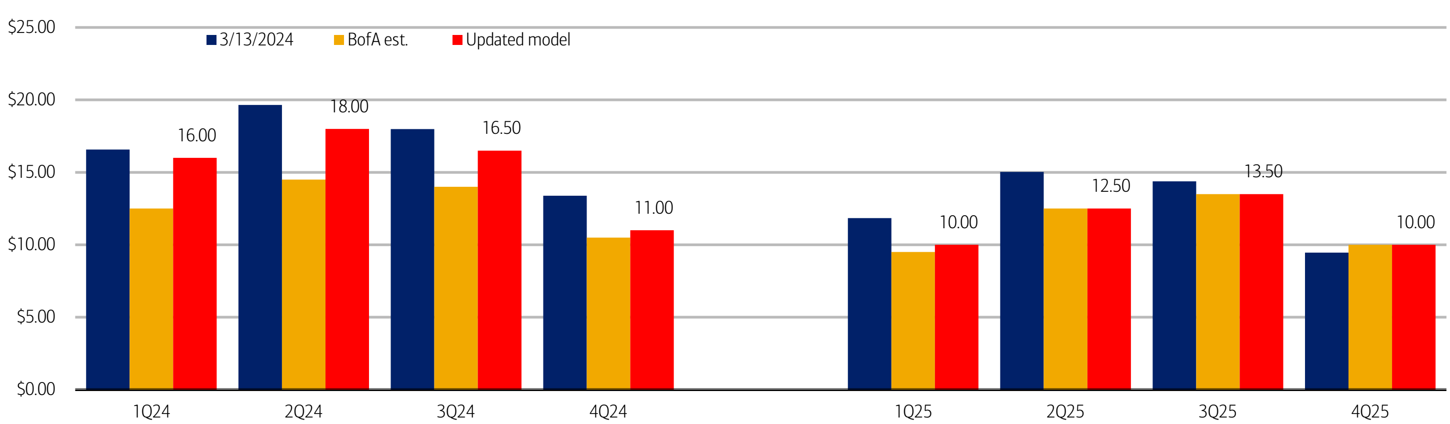
- This alone adds 5% - 30% to sector free cashflow and speaks to the material operational leverage that even modest changes in mid cycle margin assumptions can have on US refiners.

....and comes on top of summer gasoline margins that in the 3yrs since COVID have seen exacerbated volatility, a trend repeated against recovering gasoline demand back near pre-COVID levels and reduced gasoline production capacity, specifically reforming.

For 2024 the roll to summer grade gasoline has already 'spiked' paper markets, a lead indicator for the regional physical markers that lies ahead.

What this ultimately comes down to is repeated, exaggerated volatility for both summer gasoline and winter heating cracks and a forward curve that risks our prior 2024 margin assumptions higher. The current strip vs our prior base case is shown below.

Exhibit 5: Old and new cracks 2024 & 2025
Gulf Coast 321 ex-RIN forward cracks



Source: Bloomberg, BofA Global Research

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With this backdrop, in our usual periodic mark to market for US refiners, following the forward curve our EPS estimates increase by 20% on average of our US coverage for 2Q-4Q 2024.

Notable is that versus a backward oil curve and continued weakness in US natural gas, refiners stand out as one if the few areas of our energy coverage where earnings momentum is moving higher in 2024.

Exhibit 6: Estimates updated 20% 2Q-4Q 2024 and 12% from 2025 on higher mid-cycle
EPS updates reflecting move to strip in 2024 and to $12.50 from $11.50 mid-cycle

		2023E	1Q24A	2Q23A	3Q24E	4Q24E	2024E	2025E	2026E
DK	BofAS	$1.38	$0.99	$2.01	($1.59)	$2.81	$0.37	$1.25	$1.23
	Prev	1.38	0.99	2.01	(1.59)	2.81	0.37	1.25	1.23
	% Change	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Consensus	$1.00	$0.68	$1.40	($1.28)	$2.87	($0.17)	$0.89	$0.77
	% Diff	38.0%	45.6%	43.4%	nm	-2.1%	318.9%	40.6%	59.7%
DINO	BofAS	$2.02	$2.62	$4.10	$0.75	$9.43	$1.38	$1.97	$1.99
	Prev	2.02	2.62	4.10	0.75	9.43	1.38	1.97	1.99
	% Change	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Consensus	$1.52	$2.28	$3.67	$0.74	$9.44	$1.03	$2.33	$2.33
	% Diff	33.1%	15.0%	11.8%	2.0%	-0.1%	34.6%	-15.5%	-14.6%
MPC	BofAS	6.09	5.31	8.14	3.99	23.62	2.46	4.80	4.92
	Prev	6.09	5.31	8.14	3.99	23.62	2.46	4.80	4.92
	% Change	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Consensus	$5.62	$4.58	$7.75	$2.20	$21.91	$2.13	$5.65	$5.41
	% Diff	8.3%	16.0%	5.1%	81.3%	7.8%	15.3%	-15.0%	-9.0%
PBF	BofAS	$3.86	$2.29	$6.60	$0.11	$12.93	$1.57	$2.59	$2.78
	Prev	3.86	2.29	6.60	0.11	12.93	1.57	2.59	2.78
	% Change	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Consensus	$2.58	$2.23	$4.87	$0.09	$11.77	$0.67	$2.55	$2.74
	% Diff	49.4%	2.7%	35.5%	27.9%	9.8%	134.3%	1.4%	1.3%
PSX	BofAS	$4.21	$3.90	$4.63	$3.09	$15.85	$2.97	$3.82	$4.04
	Prev	4.21	3.90	4.63	2.36	15.15	3.38	4.24	4.44
	% Change	0.0%	0.0%	0.0%	30.9%	4.6%	-12.1%	-9.9%	-9.0%
	Consensus	$3.56	$3.51	$4.81	$2.35	$15.12	$2.65	$3.90	$3.99
	% Diff	18.4%	11.2%	-3.6%	31.8%	4.8%	11.9%	-2.0%	1.2%
VLO	BofAS	$8.30	$5.43	$7.51	$3.56	$24.98	$2.72	$4.92	$5.01
	Prev	8.30	5.43	7.51	3.56	24.98	2.72	4.92	5.01
	% Change	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Consensus	$7.21	$5.04	$7.33	$2.94	$24.16	$3.08	$5.21	$4.80
	% Diff	15%	8%	2%	21%	3%	-12%	-6%	4%

Source: Bloomberg, BofA Global Research estimates

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Value is about more than a single year

From a valuation standpoint, lifting EPS based on exacerbated volatility for a single year has limited impact on value, which we define on a long-term DCF basis. However, if we consider a sustainable increase in mid-cycle earnings for US refiners, anchored by appropriate recognition of increased seasonal distillate volatility we believe the conditions for another step up in absolute valuations for US refiners is in place.

The multiple as the output; refiners should not trade with E&P's

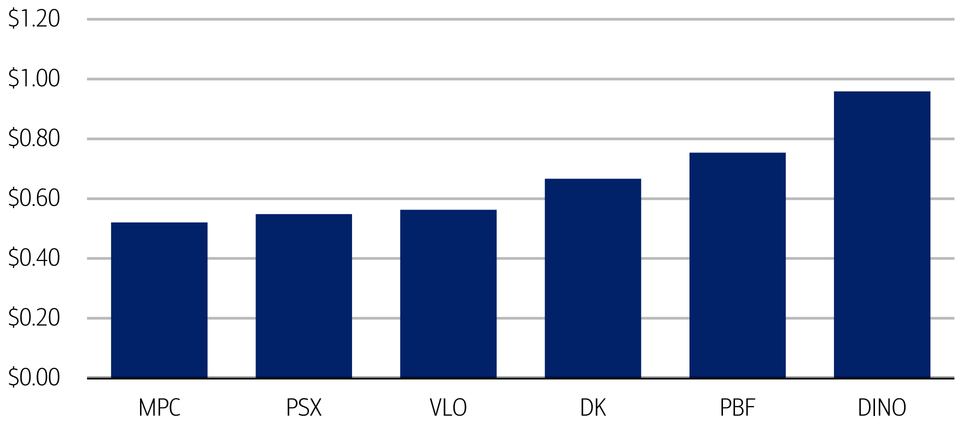
A hallmark of our view of the broader energy sector, is that absolute value is defined by discounted free cashflow, where the multiple is the output. There are several 'rules' that go along with this: refiners are equities first, refining companies second, and for all intents and purposes an oil refinery is an annuity, with relatively low required capital as a percentage of cashflow to sustain the business.

While different refiners define sustaining capital in different ways we believe a consistent measure of maintenance capital is simply:

sustaining capital + turnaround expense ex growth spending

The chart below shows remarkable consistency on the sustaining capital of individual refiners, essentially ranked by scale.

Exhibit 7: Maintenance expenses for the large refiners looks narrowly bound at $0.50-0.55/bbl
Maintenance expense / bbl of throughput



Source: BofA Global Research

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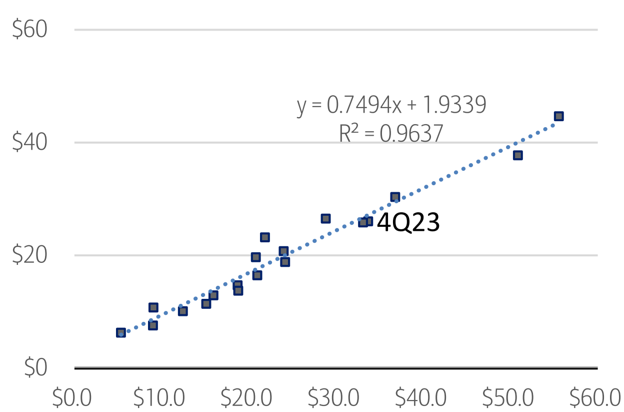
Then there is the portfolio capability of the refining portfolio, which includes crude slate, complexity and associated operating costs that accompanies the configuration of an individual plant. We design this based on two decades of data and almost 30 years of sector coverage to follow the logic of the linear programs that define an individual refiners' portfolio 'capture rate', anchored on infinite variables around product yield and crude slate. For example, the realized margin vs indicator margin for Marathon Petroleum's Mid Continent / Gulf Coast assets and separately, the West Coast is shown below.

The charts below compare benchmark margins (x-axis) to the realized margin (y-axis). A high r-squared suggests that the benchmarks explain the majority of realized margin.

Exhibit 8: West Coast realized margin vs Benchmark
4Q23 in line with system capture rate



Source: BofA Global Research

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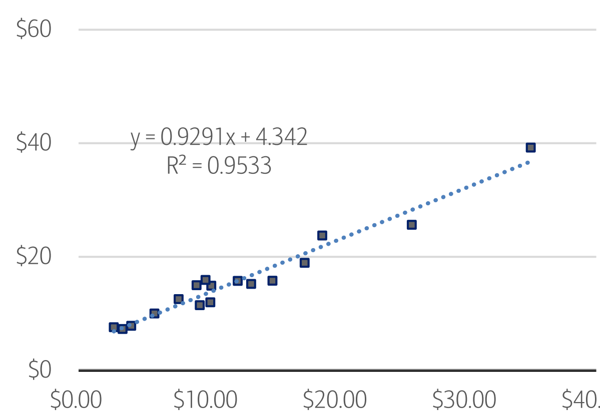
Exhibit 9: Mid con / GC realized margin vs ML benchmark
4Q23 in line with system capture rate



Source: BofA Global Research

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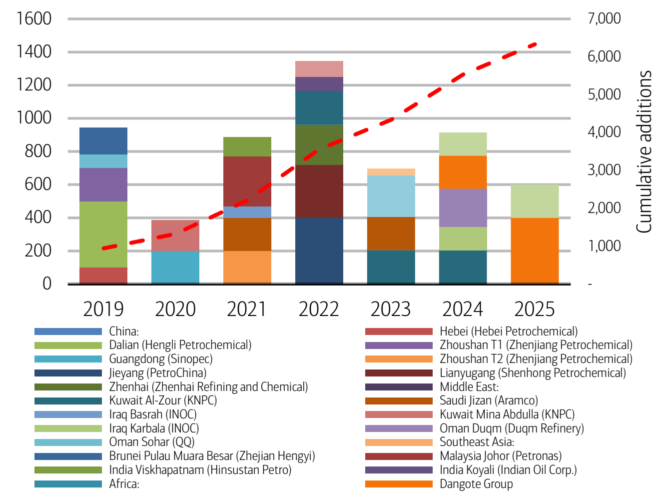
While each company has a different regional configuration and reporting disclosure we have a similar structure for all independent refiners, which drives our view of portfolio profitability and free cashflow. Net of capex and adjusting for other business lines or equity ownership (MPC's share of MPLX for example) we derive our view of the equity value for individual stocks. But at its root, the value of the refining business is a DCF calculation – where one critical input is the weighted average cost of capital. Here we believe the change in dynamics of US refining margins demands a different view of what that means for the appropriate cost of capital.

Arguments for a secular re-rating

Refining margins are volatile by nature. Outside of larger economic cycles, this volatility is dominated by seasonal swings around regulate product changes (summer and winter gasoline) and changes in demand (winter heating). But what matters for value is how this seasonal volatility translates to average margins and sustainable free cashflow. For the US refiners we believe this has shifted higher:

- Net global refining additions are heading towards a wash; but in the US we see net closures to date and pending closures (Rodeo shuttered mid Feb, Lyondell Texas pending early 2025) increasing US incremental dependency on higher cost imports;
- Stabilizing demand against a backdrop of required periodic maintenance means regional margin 'spikes' are more frequent, a phenomenon that has arguably raised regulatory risks in California.
- But with significant regional capacity closures in PADD 1 exacerbated seasonal volatility in winter as a new normal that for the purposes of this iteration of our RGA thesis we see lifting average annual margins for US refiners.

Exhibit 10: Global capacity additions since 2019
Dangote & Dos Bocas will add 1mm b/d of combined capacity by end 2025



Source: BofA Global Research

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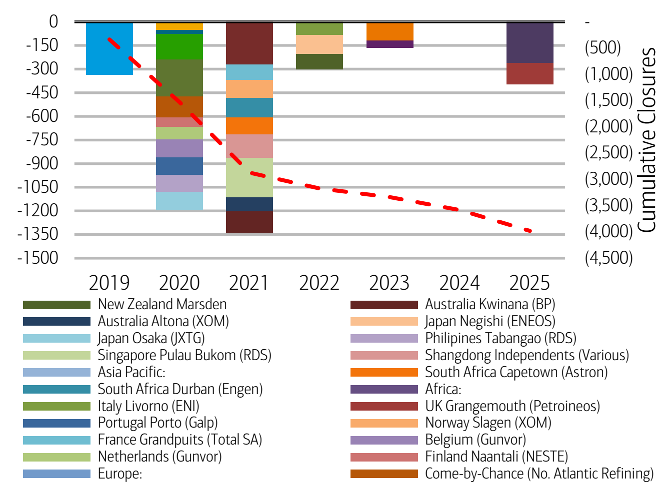
Exhibit 11: Global capacity closures since 2019
Next shutdowns to watch are Rodeo, Lyondell and Grangemouth



Source: BofA Global Research

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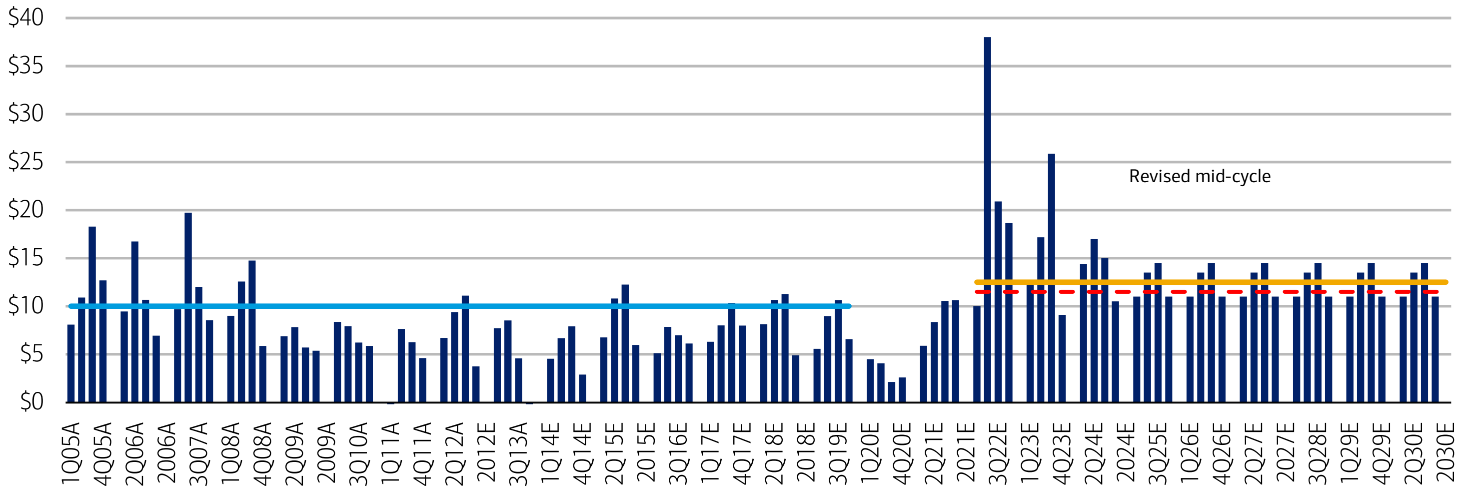
Refiners as a whole are also behaving differently. Unnecessary capacity creep is old news and while there have been incremental capacity additions or plant restarts to partly offset closures, this has been accompanied by a robust export market, and one regionally polarized (East coast imports, Gulf Coast exports and likely West Coast imports). When netted together we believe it is reasonable to expect another reset in mid cycle margins for US refiners that is significant for our view of sustainable US refining profitability.

Exhibit 12: Revised mid-cycle assumes repeatable distillate volatility
...increases our long-term GC 321 margin assumption to $12.50/bbl (Brent) vs $11.50/bbl for RGA part 1 and a long term average of $10.00 pre COVID



Source: BofA Global Research

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On balance we contend that with capital discipline, higher mid cycle profitability and management's commitment to cash returns the perceived quality of the refining business model has materially improved – and deserves a call out for the several factors that distinguish the refining sector vs broader energy peers.

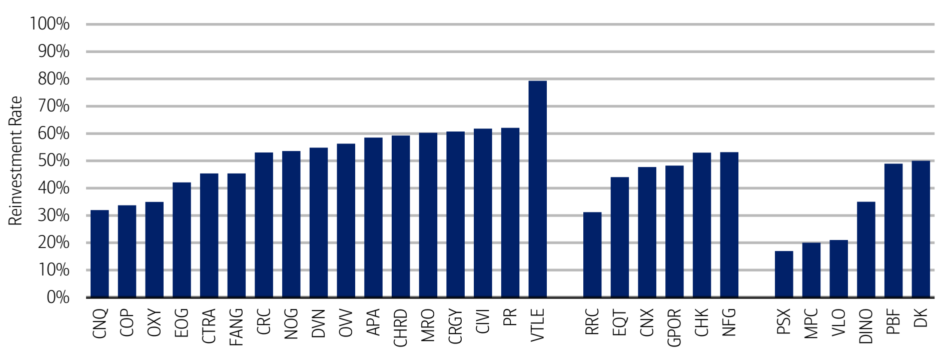
Specifically, our focus is asset duration and capital efficiency.

- Refiners by their nature are annuity businesses in our view – long life assets that neither deplete nor decline. Contrast that with the renewed focus on inventory lives for US E&Ps that has been a critical focus of our relative sector valuation thesis, with inventory life a critical constraint on the finite DCF value for US E&Ps.

- Secondly, we see reinvestment rates as a critical parameter that differentiates refiners from E&P peers.

Perhaps another way of looking at this is that refiners have a theoretical terminal value; the depleting resource of US E&Ps do not. A glance at mid cycle (sustaining) capital for E&Ps to sustain production (reinvestment rates of 30%-60%) vs 20%-50% for US refiners puts this in context.

Exhibit 13: Maintenance capital (and turnaround expense) as a pct. of adjusted op. cash flow
Reinvestment rates are materially lower for refining



Source: BofA Global Research

BofA GLOBAL RESEARCH

One similarity between the two - E&P's and refiners – is that both have seen mid cycle free cashflow reset. But we contend this has been for two very different reasons.

- For E&P's, our historical view, that the 'DCF of zero is zero,' was a reference to the perpetual spending and unnecessary growth in a subsidized oil market. Free cashflow has been reset by capital discipline as a new normal.

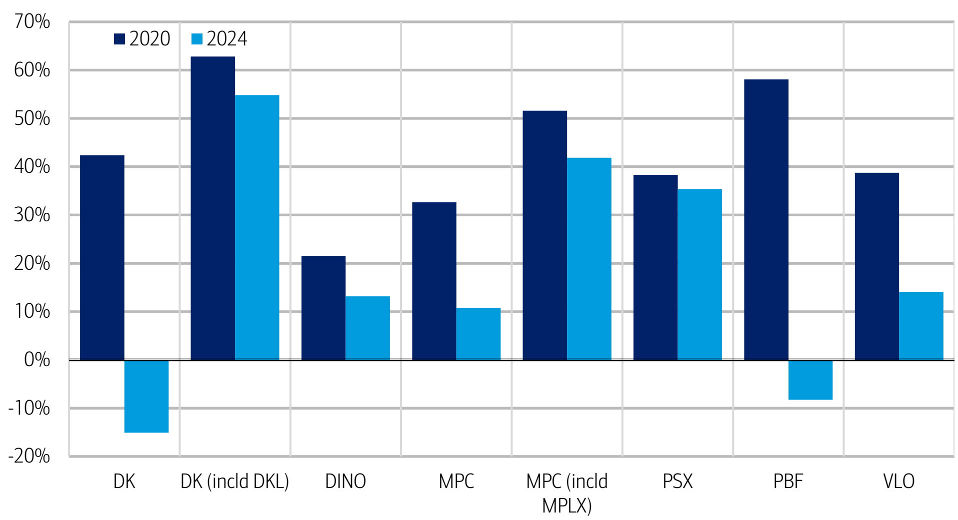
- For refiners, capital discipline has been a staple of a mature industry facing expectations of declining demand trends for a decade. Here we see FcF for US refiners reset by structural changes in the market – capacity closures, population growth, regulatory constraints and an embedded cost advantage vs global peers.

Of course, things can change. Recessionary risk and negative economic cycles remain the biggest concern for a mature industry. OPEC can cut oil production to balance supply in a demand downturn; but with an economic led collapse in demand for an extended period high operational leverage of the refining sector can lead quickly to a collapse in free cashflow for a business that has significant fixed costs.

This was most recently apparent during COVID – but it has reinforced sector management's focus on balance sheet strength and a potent reminder that holding low levels of net debt / higher levels of cash is one way to lower equity volatility. Additionally, consider that with new equity issues a rarity for this sector, we believe a holistic view of the refinery Industry's cost of capital really comes down to the cost of incremental debt - if and when cyclical weakness requires it. Again, we saw this in earnest during COVID. But in the aftermath, the broader refining industry has followed with a period of rapid deleveraging for many names, including holding higher levels of cash on hand.

Observing the chart below, note that the biggest changes have occurred amongst the 'pure play' refiners (VLO, PBF), those whose balance sheets are not inflated by non-refining business, or consolidated midstream.

Exhibit 14: Sector has significantly deleveraged since the depths of COVID (2020)
Net debt / book capitalization

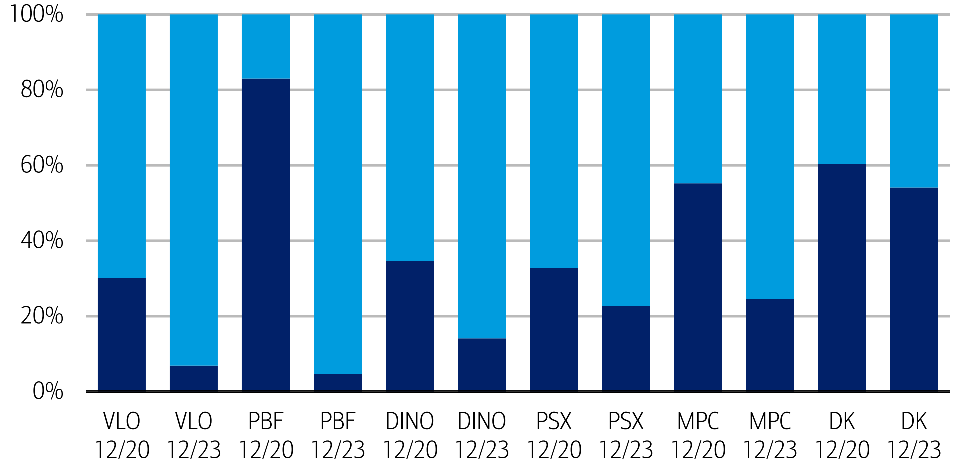


Source: BofA Global Research

BofA GLOBAL RESEARCH

With a tailwind form several years of a 'Regional Golden Age', equity value in the capital structure has been reset higher. As shown in the charts below US refiners now stand with average net debt / EV around 10%.

Exhibit 15: Leverage as a pct. of capital structure has fallen 43%
Ratio of net debt to enterprise value



Source: BofA Global Research

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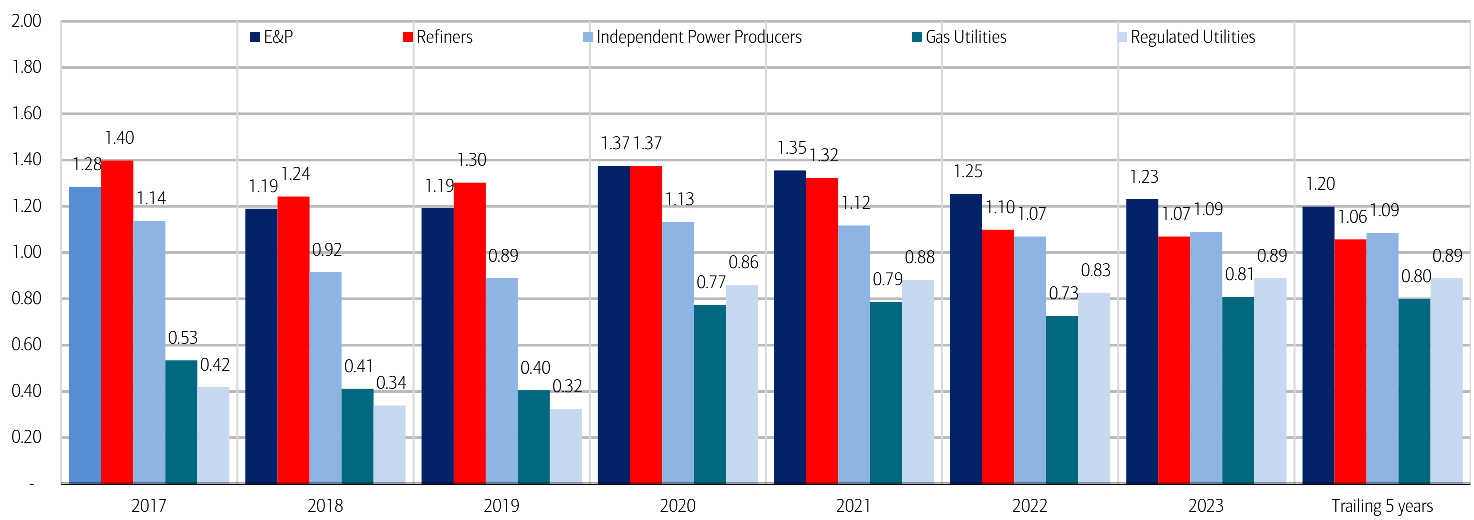
In our view the net of this should be a lower cost of capital – not just as a consequence of a weighted average debt / equity balance, but as reflection of reduced equity volatility. Examination of how relative sector beta for the US refiners has evolved suggests that's exactly what has played out.

- The chart below illustrates how equity volatility for key energy sub-sectors has changed since 2017.
- Refiners stand out. Volatility as measured by sector beta (definition below), has declined materially since 2017, falling from 1.40 in 2017 to 1.07 in 2023.
- In contrast, US E&P's measure about the same, as do Independent Power Producers, while Gas and Regulated Utilities appear to have reset higher since COVID mainly through interest rate changes.

Exhibit 16: Beta (five year; weekly periodicity; versus the S&P 500 Index)
We believe the trajectory of betas justifying a lower cost of capital for refiners



Source: BofA Global Research

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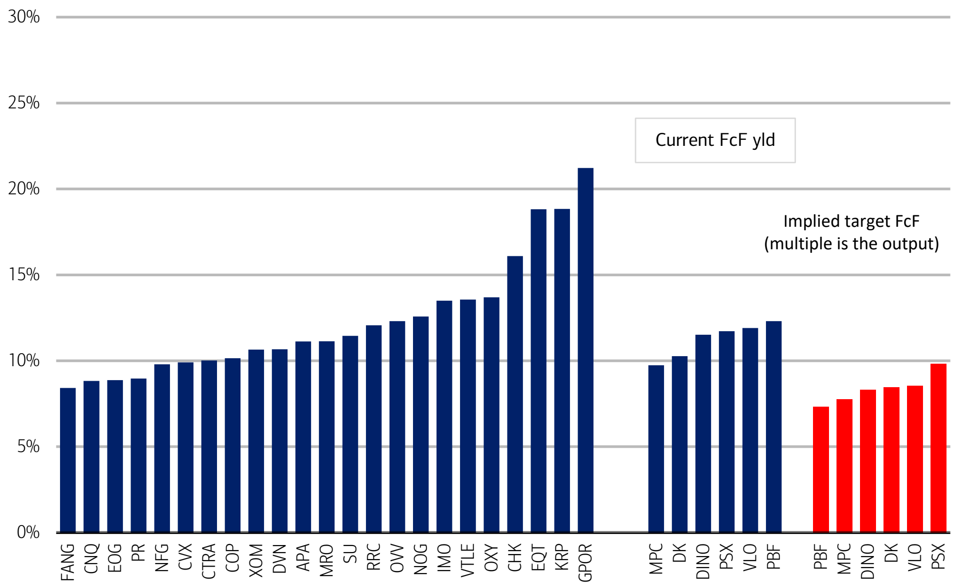
When taken together we believe the intuitive outcome should be a lower cost of capital. While sector valuations have benefited from higher average margins, our contention is that the multiple expansion applied to those higher margins has not changed to any meaningful extent. In fact when viewed vs E&P peers we see mid cycle FcF yields essentially in line – which we believe misvalues the relative attributes for a stable long term business, with an equally volatile commodity backdrop.

Exhibit 17: Mid-Cycle free cash flow yield
At our price objectives, FCF yields are undervalued by ~3%



Source: BofA Global Research

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PO changes

Raise PO's 25%

We summarize our view with two conclusions:

- First, we believe the observed decline in the cost of capital is the overlooked catalyst that can re-rate the multiples of the US refiners.
- With the multiple (or free cashflow yield) as an output, we believe the US refining sector remains undervalued in both absolute terms and vs E&P and market peers.

Incorporating incrementally higher mid cycle margins with lower cost of capital we reset PO's for the US refiners by 20%- 50%, with the biggest moves those that have seen the biggest shift in capital structure. The table below summarizes the output for our US refining coverage, with several observations:

- With the focus on capital structure as a route to lower equity volatility, we see the biggest deltas on cost of capital with the 'pure play' refiners. Note we had already lowered our cost of capital for MPC with 4Q23 earnings as a pre cursor to this sector wide reset in discount rates.
- DK is the exception: with an equity value of $2.0bn, but some $1.0bn represented by its 78% ownership in DKL, we see the DCF value of the stand-alone refining business exacerbated versus the relative stability brought to its total EV from DKL. On review we believe DK's high beta means higher cost of capital is appropriate and the modest offset to the higher mid cycle margins in our view of fair value.
- Higher mid cycle margins, while accompanied by wider volatility comes with higher highs and higher lows, and free cashflow still resilient at the lows;

Exhibit 18: WACC updates and PO updates highlighted as follows
We Upgrade VLO, PBF & DINO to Buy from Neutral

	Prior		Lower WACC		$2.50 Mid-cycle	NEW PO	Current Price	Potential Upside	Rating
	PO	WACC	+/-	New WACC	+/-				
PBF	52	9.00%	8	8.00%	14	74	54.96	35%	BUY from Neutral
VLO	156	9.00%	31	8.00%	23	210	158.60	32%	BUY from Neutral
DINO	62	9.25%	8	8.25%	8	78	58.93	32%	BUY from Neutral
MPC	185	8.00%	0	8.00%	40	225	189.56	19%	NEUTRAL
PSX	150	8.50%	15	8.00%	15	180	154.86	16%	NEUTRAL
DK	30	10.00%	1	11.00%	1	32	27.59	16%	NEUTRAL

Source: BofA Global Research

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Summary

Upgrade VLO, PBF, DINO to Buy

In absolute terms, the impact of higher mid cycle margins is blunted by non-refining cashflow, so that incremental upside for PSX, MPC and DK from higher margins is less than VLO, DINO and PBF. We also reflect on recent strength of MPC and PSX – bolstered respectively by the dividend distributions from MPLX deployed to share buy backs, and the activist campaign that has supported PSX absolute performance.

Our updated price objectives and ratings are shown below. On average PO's move up by 25% with the greatest impact on the pure plays VLO, DINO and PBF. With average upside >30%, we upgrade all three to Buy, exploiting the impact of a higher mid cycle, but also seasonal tailwinds we expect to bring outsize earnings revisions for their respective 'pure play' refining leverage. POs for PSX and MPC move up by 20%, attractive in absolute terms but in line with our broader E&P sector coverage leaving us Neutral after strong performance for both names.

Exhibit 19: US Independent Refiners Valuation Summary
Upgrading PBF, VLO and DINO to Buy

Ticker	Company	Rating	Previous	Current Price	New PO	PO	CHG	Potential Upside %	Yield %	Mkt Cap ($mn)	Net Debt ($mn)	EV ($mn)
Refiners												
PBF	C-1-7	BUY	NEUTRAL	$54.69	$74	$52	42.3%	35%	1.8%	6,539	(650)	5,889
VLO	C-1-7	BUY	NEUTRAL	$159.39	$210	$156	34.6%	32%	2.7%	52,994	5,610	58,604
DINO	C-1-7	BUY	NEUTRAL	$58.25	$78	$62	25.8%	34%	3.4%	11,567	955	12,522
MPC	B-2-7	NEUTRAL	NEUTRAL	$188.98	$225	$185	21.6%	19%	1.7%	68,096	14,226	82,322
PSX	B-2-7	NEUTRAL	NEUTRAL	$154.38	$180	$150	20.0%	17%	2.7%	66,048	16,737	82,785
DK	C-2-9	NEUTRAL	NEUTRAL	$27.67	$32	$30.0	6.7%	16%	3.5%	1,771	1,975	3,747
Source: BofA Global Research								16%	3.1%			

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To be clear we believe the market's view of sustainable mid cycle margins is still being reset. Near term support from repeatable summer margin strength is already underway, helped by heavy planned maintenance as a route to cleaning up excess winter gasoline inventories. Near term, continued delays to start up of large Atlantic basin refineries means near term risks are pushed out as new regional balances are understood. We expect additional strategic pauses in our sector stance as these additional questions are answered. But for now, we see justification for a modestly higher mid cycle margin supporting another reset in our view of absolute value for the US refiners.

What if we're wrong?

Seasonal tailwinds mitigate near term risk / reward

New term momentum provides tailwinds that frankly will allow the market to monitor whether our thesis of 'repeatable' higher highs and higher lows is reasonable. Summer is dominated by gasoline – and with the tightness in US octane and expected premium on lower RVP feedstock we see earnings momentum for the broader sector risked higher. As always investors may see logic in a strategic pause as summer ends, pending how absolute sector performance behaves. Additionally, the timing and scale of new refinery additions ex US will inevitably influence sector sentiment until 'known unknowns' play out. But for the next seasonal phase of elevated refining volatility, we believe upside risk to mid cycle and tailwinds from another round of earnings revisions sees the US refiners favorably positioned for at least the next period of seasonal gasoline strength.

With that said we lean towards pure play exposure to differentiate stock selection. Accordingly, we bias sector coverage towards where we see greatest relative value. VLO. DINO and PBF move to Buy.

Appendix

Valuation Summary

Exhibit 20: Independent US Refiners Valuation summary
Average potential upside to sector moves up to 25%

Ticker	Share Price	BofA Opinion	Rating	Price Objective	Potential Upside (%)	Yield (%)	Market Cap ($mn)	Net Debt ($mn)	EV ($mn)
Refiners									
PSX	$154.38	B-2-7	NEUTRAL	$180	20.0%	17%	2.7%	66,048	16,737
MPC	$188.98	B-2-7	NEUTRAL	$225	21.6%	19%	1.7%	68,096	14,226
VLO	$159.39	C-1-7	BUY	$210	34.6%	32%	2.7%	52,994	5,610
PBF	$54.69	C-1-7	BUY	$74	42.3%	35%	1.8%	6,539	(650)
DINO	$58.25	C-1-7	BUY	$78	25.8%	34%	3.4%	11,567	955
DK	$27.67	C-2-9	NEUTRAL	$32	6.7%	16%	3.5%	1,771	1,975
						25%	**2.7%**		

Source: BofA Global Research

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Investment Rationale

HF Sinclair Corporation

The basis of our Buy Rating reflects our preference for pure play exposure given what we see as a higher, sustainable mid-cycle environment

PBF Energy

The basis of our Buy Rating reflects our preference for pure play exposure given what we see as a higher, sustainable mid-cycle environment

Valero Energy Corp.

The basis of our Buy Rating reflects our preference for pure play exposure given what we see as a higher, sustainable mid-cycle environment

Price objective basis & risk

Delek US Holdings, Inc. (DK)

Our price objective of $32/share is based on an assessed DCF value treating the assets as annuities after deducting maintenance capital. We use a long term Gulf Coast 321 crack spread in our benchmark assumptions of $12.50/bbl, a long-term crude differential of $4, a WACC of 11.0%, a zero terminal growth rate, and a 21% corporate tax rate.

The downside (upside) risks to our PO are as follows: (1) Revenue commitments for agreements with DKL could pose a risk in the event of downtime at refineries. (2) It is vulnerable to refining margin correction. If demand for refined products is weaker (stronger) than expected, or if oil prices remain robust (weak), this could pressure (lift) margins. (3) The inability to capture the price environment due to cost pressures (opex, capex, and taxation).

HF Sinclair Corporation (DINO)

Our price objective of $78/share is based on an assessed discounted cash flow (DCF) value, treating the assets as annuities after deducting maintenance capital. We use a long-term Gulf Coast 321 crack spread in our benchmark assumptions of $12.50/barrel, a long-term crude differential of $3.50, a weighted-average cost of capital (WACC) of 8.25%, a zero terminal growth rate, and a 22% corporate tax rate

The downside (upside) risks to our PO: (1) Revenue commitments for agreements with HEP could pose a risk in the event of downtime at refineries. (2) It is vulnerable to refining margin correction. If demand for refined products is weaker (stronger) than expected, or if oil prices remain robust (weak), this could pressure (lift) margins. (3) It could be unable to capture the price environment due to cost pressures (opex, capex, and taxation).

Upside risks are better margins than anticipated and outperformance at Holly Energy Partners (HEP), of which HFC owns 60%.

Marathon Petroleum Company (MPC)
Our price objective of $225/share is based on an assessed DCF value treating the assets as annuities after deducting maintenance capital. We use a long-term Gulf Coast 321 crack spread in our benchmark assumptions of $12.50/bbl, a long-term crude differential of $3.5, a WACC of 8.0%, a zero terminal growth rate.

Upside risks to our price objective are higher crack spreads as a result of unforeseen tightness in refined product markets. The downside risks to our price objective are as follows: (1) The company is weighted toward sour crude and has a number of expansion projects to process more sour crude. If the sweet-sour crude differentials narrow, the benefits of a more complex refinery would diminish, which could delay their return on investment. (2) The company is vulnerable to refining margin correction. If demand for refined products is weaker than expected, or if oil prices remain robust, this could pressure margins. (3) The company could be unable to capture the price environment due to cost pressures (opex, capex, and taxation).

PBF Energy (PBF)
Our price objective (PO) of $74/share is based on an assessed discounted cash flow (DCF) value treating the assets as annuities after deducting maintenance capital. We use a long term Gulf Coast 321 crack spread in our benchmark assumptions of $12.50/barrel, a long-term crude differential of $3.5, a weighted-average cost of capital (WACC) of 8%, a zero terminal growth rate, and a 26% corporate tax rate.

Upside risks to our PO are if crude spreads and crack spreads remain above our expectations there could be upside to earnings and valuation. Downside risks to our PO are: if margins and crude spreads compress faster than we forecast, this could hurt earnings and shares.

Phillips 66 (PSX)
Our price objective of $180/share is based on a sum of the parts valuation of PSX's four main businesses with refining assets assessed by a discounted cash flow (DCF) value that treats the assets as annuities after deducting maintenance capital. This valuation is also supported by a dividend discount model. We use a long term Gulf Coast 321 crack spread in our benchmark assumptions of $12.5/bbl, a long-term crude differential of $3.5 and a weighted-average cost of capital (WACC) of 8.0%, and a 22% corporate tax rate.

The risks to our price objective are (1) the company is weighted toward heavy crude. As light-heavy crude differentials narrow, the benefits of a more complex refinery will diminish, which may delay return on investment, (2) the company is vulnerable to refining margin correction. If demand for refined products or chemicals is weaker than expected, or if oil prices remain robust, this could pressure margins, (3) the inability to capture the price environment due to cost pressures (opex, capex, and taxation).

Valero Energy Corp. (VLO)

Our price objective of $210/share is based on an assessed DCF value by treating the assets as annuities after deducting maintenance capital. We use a long term Gulf Coast 321 crack spread in our benchmark assumptions of $12.50/bbl, a long-term crude differential of $3.5 and a WACC of 8%, a zero terminal growth rate, and a 22% corporate tax rate.

Downside risks to our price objective are: (1) the company is heavily weighted toward sour crude. As light-heavy crude differentials narrow, the benefits of a more complex refinery will diminish, which may delay return on investment, (2) the company is vulnerable to refining margin correction. If demand for refined products is weaker than expected, or if oil prices remain robust, this could pressure margins, (3) the inability to capture the price environment due to cost pressures (opex, capex, and taxation), (4) tax reform is not passed.

Upside risks to our price objective are: (1) higher-than-expected crack spreads, and (2) stronger-than-expected gasoline demand.

Analyst Certification

I, Doug Leggate, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

US - Large Cap Oils Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	APA Corporation	APA	APA US	Doug Leggate
	Canadian Natural Resources	CNQ	CNQ US	Doug Leggate
	Canadian Natural Resources	YCNQ	CNQ CN	Doug Leggate
	Chesapeake Energy	CHK	CHK US	Doug Leggate
	Chevron Corp.	CVX	CVX US	Doug Leggate
	ConocoPhillips	COP	COP US	Doug Leggate
	Coterra Energy Inc	CTRA	CTRA US	Doug Leggate
	EQT Corporation	EQT	EQT US	Doug Leggate
	ExxonMobil Corp.	XOM	XOM US	Doug Leggate
	Granite Ridge Resources, Inc	GRNT	GRNT US	John H. Abbott
	HF Sinclair Corporation	DINO	DINO US	Doug Leggate
	Imperial Oil	IMO	IMO US	Doug Leggate
	Imperial Oil	YIMO	IMO CN	Doug Leggate
	Kimbell Royalty Partners	KRP	KRP US	John H. Abbott
	Magnolia Oil and Gas	MGY	MGY US	Noah Hungness
	Occidental Petroleum Corp.	OXY	OXY US	Doug Leggate
	Ovintiv Inc	OVV	OVV US	Doug Leggate
	Ovintiv Inc	YOVV	OVV CN	Doug Leggate
	PBF Energy	PBF	PBF US	Doug Leggate
	Range Resources Corp	RRC	RRC US	Doug Leggate
	Suncor	SU	SU US	Doug Leggate
	Suncor	YSU	SU CN	Doug Leggate
	Valero Energy Corp.	VLO	VLO US	Doug Leggate
NEUTRAL				
	California Resources Corporation	CRC	CRC US	Kalei Akamine
	CNX Resources	CNX	CNX US	John H. Abbott
	Delek US Holdings, Inc.	DK	DK US	Doug Leggate
	Devon Energy Corp.	DVN	DVN US	Doug Leggate
	Diamondback Energy Inc.	FANG	FANG US	Doug Leggate
	EOG Resources	EOG	EOG US	Doug Leggate
	Gulfport Energy Corporation	GPOR	GPOR US	Doug Leggate
	Marathon Petroleum Company	MPC	MPC US	Doug Leggate
	Permian Resources Corporation	PR	PR US	Doug Leggate
	Phillips 66	PSX	PSX US	Doug Leggate
UNDERPERFORM				
	Chord Energy Corporation	CHRD	CHRD US	John H. Abbott
	Crescent Energy Company	CRGY	CRGY US	John H. Abbott
	Marathon Oil Corp.	MRO	MRO US	Doug Leggate
	National Fuel Gas Company	NFG	NFG US	John H. Abbott
	Northern Oil and Gas	NOG	NOG US	John H. Abbott
	Vital Energy Inc	VTLE	VTLE US	John H. Abbott
RSTR				
	Pioneer Natural Resources	PXD	PXD US	Doug Leggate

Disclosures

Important Disclosures

Equity Investment Rating Distribution: Energy Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships R1	Count	Percent
Buy	83	61.48%	Buy	64	77.11%
Hold	28	20.74%	Hold	21	75.00%
Sell	24	17.78%	Sell	18	75.00%

Equity Investment Rating Distribution: Global Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships R1	Count	Percent
Buy	1895	53.62%	Buy	1083	57.15%
Hold	832	23.54%	Hold	454	54.57%
Sell	807	22.84%	Sell	383	47.46%

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster R2
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

R2 Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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