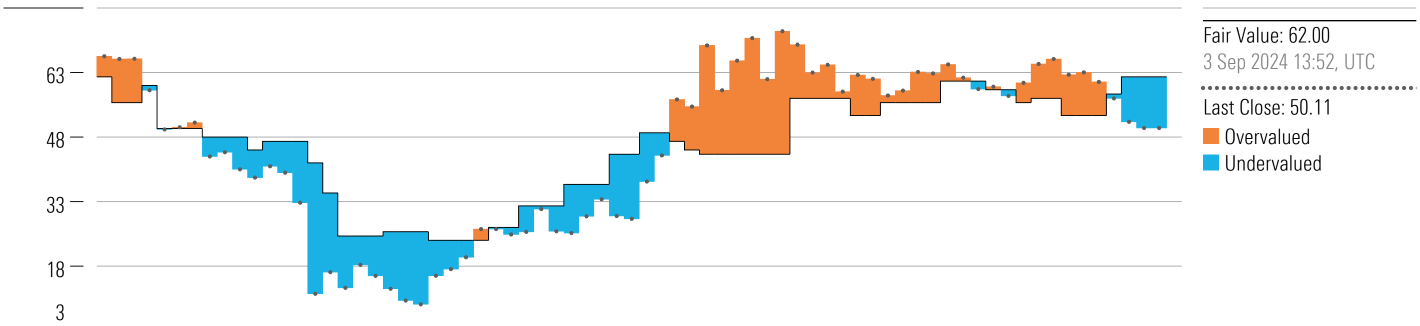
Morningstar Equity Analyst Report | Report as of 2 Nov 2024 04:09, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 1 of 19

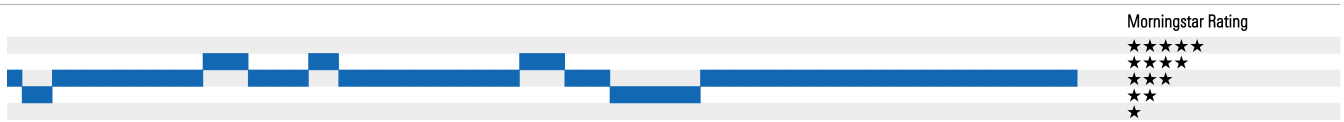
Occidental Petroleum Corp OXY ★★★ 1 Nov 2024 21:38, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
50.11 USD 31 Oct 2024	62.00 USD 3 Sep 2024 13:52, UTC	0.81	45.42 USD Bil 1 Nov 2024	None	Mid Value	Very High	Standard	2 Oct 2024 05:00, UTC

Price vs. Fair Value



	2019	2020	2021	2022	2023	YTD	
	0.88	0.72	0.66	1.11	1.01	0.81	Price/Fair Value
	-27.75	-56.01	67.71	119.08	-4.06	-14.97	Total Return %



Total Return % as of 31 Oct 2024. Last Close as of 31 Oct 2024. Fair Value as of 3 Sep 2024 13:52, UTC.

Contents

Important Disclosure

The conduct of Morningstar's analysts is governed by Code of Ethics/Code of Conduct Policy, Personal Security Trading Policy (or an equivalent of), and Investment Research Policy. For information regarding conflicts of interest, please visit: http://global.morningstar.com/equitydisclosures.

The primary analyst covering this company does not own its stock.

[1]The ESG Risk Rating Assessment is a representation of Sustainalytics' ESG Risk Rating.

Occidental Petroleum Continues Record of Cost-Efficient Production as CrownRock Acquisition Closes

Business Strategy & Outlook Joshua Aguilar, Director, 8 Aug 2024

Occidental is one of the world's largest independent oil and gas producers. Its upstream operations are spread across the US, Middle East, and North Africa. It has a consolidated midstream business, which provides gathering, processing, and transport services to the upstream segment, and it holds a majority equity interest in Western Midstream. The portfolio also includes a chemicals business, which produces caustic soda and PVC. The latter segment benefits from low energy and ethylene costs, while its profitability is determined by the strength of the broader economy.

The $55 billion Anadarko deal was a huge undertaking for Oxy, which itself had an enterprise value of about $50 billion at the time. The cash portion was partly financed with a $10 billion preferred equity investment from Berkshire Hathaway along with the proceeds from the sale of Anadarko's Mozambique assets, which Total purchased for $3.9 billion in late 2019. While these arrangements left Oxy with a heavy debt burden prior to the pandemic, drastic measures helped management steady the ship, and the firm took full advantage of the subsequent rebound in commodity prices, generating enough cash to fully repair the balance sheet and pave the way for significant capital returns. The firm is obligated to match distributions above $4 per share annually with preferred equity redemptions.

The midstream segment also includes Oxy Low Carbon Ventures, which partners with third parties to

Morningstar Equity Analyst Report | Report as of 2 Nov 2024 04:09, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 2 of 19

Occidental Petroleum Corp OXY ★★★ 1 Nov 2024 21:38, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
50.11 USD 31 Oct 2024	62.00 USD 3 Sep 2024 13:52, UTC	0.81	45.42 USD Bil 1 Nov 2024	None	Mid Value	Very High	Standard	2 Oct 2024 05:00, UTC

Sector
Energy

Industry
Oil & Gas E&P

Business Description

Occidental Petroleum is an independent exploration and production company with operations in the United States, Latin America, and the Middle East. At the end of 2023, the company reported net proved reserves of nearly 4 billion barrels of oil equivalent. Net production averaged 1,234 thousand barrels of oil equivalent per day in 2023 at a ratio of roughly 50% oil and natural gas liquids and 50% natural gas.

implement carbon capture, storage, and utilization projects. This activity differentiates Occidental from most peers, which merely focus on curtailing their own emissions. Oxy's experience sequestering carbon dioxide for enhanced oil recovery potentially enables it to go further. Management has ambitious plans to develop direct air capture facilities that should also generate incremental revenue.

Finally, Oxy completed the roughly $12 billion CrownRock acquisition on Aug. 1, 2024, which gives Oxy a high-graded asset portfolio, allowing Oxy to add significant production capacity in the Midland Basin. While this acquisition comes at an elevated capital cost, we think it will help create firmwide operating efficiencies.

Bulls Say Joshua Aguilar, Director, 3 Sep 2024

- Oxy has a dominant position in the Permian Basin, which is the cheapest source of production in the US and is expected to be a major growth engine in the next few years.
- Oxy's conventional assets in the Gulf of Mexico and the Middle East complement its shale operations nicely by generating stable cash flows from assets with a much lower base decline rate.
- The Oxy Low Carbon Ventures segment is synergistic with Oxy's chemical business, and Oxy's enhanced oil recovery portfolio holdings and expertise give it a natural advantage in carbon capture.

Bears Say Joshua Aguilar, Director, 3 Sep 2024

- Though Oxy’s Permian wells exhibit very high initial production rates, they also decline very quickly.
- The Anadarko acquisition bolstered Oxy's Permian footprint but left it with other assets it didn't really want, such as its Western Midstream stake and its North Africa operations.
- Oxy will have to share the spoils from its ambitious carbon capture plans, and since it isn't providing financing or engineering, it will have to give away a sizable working interest.

Economic Moat Joshua Aguilar, Director, 8 Aug 2024

The upstream oil and gas industry realized fairly recently that investors are more interested in consistent and stable returns than they are in breakneck production growth, and most firms are now committed to conservative capital programs with low reinvestment rates and generous shareholder distributions. But a handful of producers were doing this long before the rest of the industry hopped on the bandwagon, and Oxy was one of them. The firm generated substantial excess returns on invested capital during 2008-14.

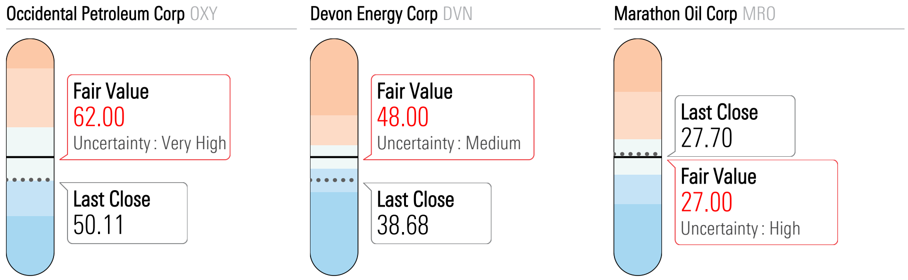
This record was upended by the collapse in global crude prices at the end of 2014, and economic profits evaporated the following year. Like peers, Oxy eventually adapted to lower prices by improving efficiency and using new technology to reduce costs. But just when profitability was recovering, it jumped into a very large and expensive corporate acquisition in 2019, which took several years to digest. The target, Anadarko Petroleum, did not itself have a moat, and Oxy paid a substantial takeover

Morningstar Equity Analyst Report | Report as of 2 Nov 2024 04:09, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC.

Occidental Petroleum Corp OXY ★★★ 1 Nov 2024 21:38, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
50.11 USD 31 Oct 2024	62.00 USD 3 Sep 2024 13:52, UTC	0.81	45.42 USD Bil 1 Nov 2024	None	Mid Value	Very High	Standard	2 Oct 2024 05:00, UTC

Competitors



	Occidental Petroleum Corp OXY	Devon Energy Corp DVN	Marathon Oil Corp MRO
Economic Moat	None	Narrow	None
Currency	USD	USD	USD
Fair Value	62.00 3 Sep 2024 13:52, UTC	48.00 7 Aug 2024 18:39, UTC	27.00 8 Aug 2024 18:29, UTC
1-Star Price	108.50	64.80	41.85
5-Star Price	31.00	33.60	16.20
Assessment	Fairly Valued 1 Nov 2024	Undervalued 1 Nov 2024	Fairly Valued 1 Nov 2024
Morningstar Rating	★★★1 Nov 2024 21:38, UTC	★★★★1 Nov 2024 21:38, UTC	★★★1 Nov 2024 21:37, UTC
Analyst	Joshua Aguilar, Director	Joshua Aguilar, Director	Joshua Aguilar, Director
Capital Allocation	Standard	Exemplary	Standard
Price/Fair Value	0.81	0.80	1.01
Price/Sales	1.74	1.57	2.43
Price/Book	1.89	1.92	1.36
Price/Earning	14.41	4.70	10.95
Dividend Yield	1.69%	5.22%	1.61%
Market Cap	45.42 Bil	24.00 Bil	15.25 Bil
52-Week Range	49.51—71.19	37.77—55.09	21.81—30.06
Investment Style	Mid Value	Mid Value	Mid Value

premium. We believe the firm has turned the corner and is on the cusp of consistently earning its cost of capital once again, but the margin of safety is too thin to award it a moat at this time.

What's more, like all exploration and production firms, Oxy is exposed to potential environmental, social, and governance issues that could hurt its ability to generate strong returns. The most significant ESG exposures are greenhouse gas emissions (both from extraction operations and downstream consumption), and other emissions, effluents, and waste (primarily oil spills).

Oxy has positioned itself as a net zero champion in the industry, credibly, and its Oxy Low Carbon Ventures unit has ambitious plans to construct 70-135 direct air capture plants in the areas in which it operates. The first of these, to be constructed in the Permian Basin region, is expected online in 2024. Unlike most peers, Oxy has adopted an explicit net zero target including scope 3 emissions, and it aims to hit this milestone before 2050. The firm has an advantage over peers in this area because it uniquely

Morningstar Equity Analyst Report | Report as of 2 Nov 2024 04:09, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 4 of 19

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
50.11 USD 31 Oct 2024	62.00 USD 3 Sep 2024 13:52, UTC	0.81	45.42 USD Bil 1 Nov 2024	None	Mid Value	Very High	Standard	2 Oct 2024 05:00, UTC

benefits from both its chemicals business, which can supply potassium hydroxide and PVC for its plants, and from its enhanced oil recovery operations (a technology that boosts productivity in mature oil fields by injecting CO2 into the reservoir, creating a sink for the CO2 that gets captured and thus eliminating sequestration concerns).

But greenhouse gas emissions are still a threat. Consumers are becoming more averse to fossil fuels, increasing the probability of widespread substitution away from fossil fuels. The industry's poor reputation also makes value-destructive regulatory intervention more likely in the future (think fracking restrictions or carbon taxes). While Oxy can reasonably claim it is aiming to be a better corporate citizen than most, given its extensive carbon capture plans, the resulting impact of such interventions on oil prices would be equally painful. Such a scenario is not likely enough to be included in our base-case forecasts, but because the impact would be material, it does further erode the firm's moat potential.

Finally, spills are mainly a concern for firms operating offshore. Offshore activity is not the main focus for Oxy, but it does have operations in the Gulf of Mexico that it inherited from Anadarko. So, though the probability is very remote, a devastating accident like the BP Macondo disaster in 2010 could have a material adverse impact that could force Oxy to cover cleanup costs and perhaps face other legal repercussions. Spills also occur from time to time during long-haul transit over land, and Occidental could be vulnerable there as well, since it has substantial midstream operations. Again, though unlikely, there is a small chance that the firm could end up on the hook for an event like the Kalamazoo River spill in Michigan, which also occurred in 2010.

Fair Value and Profit Drivers Joshua Aguilar, Director, 3 Sep 2024

After reassessing our valuation of no-moat Occidental Petroleum, we lift our fair value estimate by 7% to $62. We previously did not incorporate the impact from Oxy’s midstream business benefiting from a reduction in crude oil and transportation rates from the Permian to the Gulf Coast. Management expects these lower rates will hit financials by the end of the of the third quarter of 2025. The company expects annualized savings from these rate reductions of $300 million to $400 million, with 40% of savings starting in 2025, and the full savings realized in 2026. We have no reason to disagree with this assertion and model the midpoint of this expectation.

Our new fair value estimate corresponds to enterprise value/EBITDA multiples of 5.0 times and 4.4 times for 2024 and 2025, respectively. We assume West Texas Intermediate oil prices in 2024 and 2025 will average $78 a barrel and $72/bbl, respectively. In the same periods, we expect Henry Hub natural gas prices will average $2.36 per thousand cubic feet and $3.36/mcf. We define terminal prices by our long-term midcycle price estimates (currently $60/bbl Brent, $55/bbl WTI, and $3.30/mcf natural gas).

Our production forecast for 2024 is 1.29 million barrels of oil equivalent per day, which includes the CrownRock acquisition (guidance excludes its impacts). That drives 2024 EBITDA to $15.3 billion. We expect free cash flow before working capital to reach $5.2 billion in the same period. Our 2025 estimates for production, EBITDA, and free cash flow are 1.4 mmboe/d, $17.3 billion, and $6.0 billion, respectively.

Risk and Uncertainty Joshua Aguilar, Director, 8 Aug 2024

Occidental earns a Morningstar Uncertainty Rating of Very High, largely due to the volatility of oil markets at this time. As with most E&P firms, a deteriorating outlook for oil and natural gas prices would pressure Oxy's profitability, reduce cash flows, and drive up financial leverage. An increase to federal taxes, or a revocation of the intangible drilling deduction that US firms enjoy, could also affect profitability and reduce our fair value estimate.

Material ESG exposures create additional risk for E&P investors. In this industry, the most significant exposures are greenhouse gas emissions (both from extraction operations and downstream consumption) and other emissions, effluents, and waste (primarily oil spills). In addition to the reputational threat, these issues could force climate-conscious consumers away from fossil fuels in greater numbers, resulting in long-term demand erosion. Climate concerns could also trigger regulatory interventions, such as fracking bans, drilling permit suspensions, and perhaps even direct taxes on carbon emissions.

Finally, as an offshore producer in the US, Oxy has an additional vulnerability. The firm's drilling campaign in the Gulf of Mexico requires ongoing approvals from the Department of the Interior. As this entity is controlled by the executive branch of the US government, it can suspend permitting activity without congressional approval. In the past, President Joe Biden has hinted at legislation withholding future oil and gas permits, which could hurt Oxy's growth in the Gulf.

Capital Allocation Joshua Aguilar, Director, 8 Aug 2024

Our Standard Capital Allocation Rating reflects Oxy's recently improved balance sheet, fair investment strategy, and appropriate distributions.

Vicki Hollub, an industry veteran who previously led Oxy's operations in North and South America, succeeded Stephen Chazen as CEO in 2016. Hollub presided over the widely criticized 2019 acquisition of Anadarko Petroleum for $55 billion. This transaction forced Oxy to take on substantially more leverage than we were comfortable with, leaving it with very little wiggle room if commodity prices were to deteriorate. Less than a year after the deal closed, that's exactly what has happened because of the covid-19 outbreak. As a result, Occidental was forced to cut its dividend and sell assets to ensure it can meet its looming debt obligations. While the acquisition may have made sense when it was first being considered, we think it was a mistake to enter into a bidding war with Chevron, as Oxy ended up overpaying. In addition, the deal was carefully structured to circumvent a shareholder vote, utilizing a large preferred equity infusion from Berkshire Hathaway with potentially expensive warrants attached to minimize the equity component of the consideration being offered.

While we think it was a mistake to take on so much leverage to force the deal through, we believe management deserves credit for steadying the ship afterward. The firm reacted quickly at the outset of the pandemic, dramatically curtailing its 2020 spending plans and slashing the ordinary dividend. And despite the historically weak market for oil and natural gas assets, the firm was still able to execute numerous divestitures (we were surprised by the size of the proceeds in several cases). It also refinanced several near-term debt maturities, giving it a longer runway to continue deleveraging.

Just as it essentially reached its debt goals, Occidental announced the acquisition of CrownRock for $12 billion, which Oxy closed in the third quarter of 2024. We expect the firm will have sufficient cash from both divestitures and free cash flow to service the associated debt obligations, even in a weaker commodity price environment. The deal will nevertheless keep debt management at the top of management's capital allocation priorities, just behind dividend distributions, for the foreseeable future. As it pertains to shareholder distributions, we expect the firm will meet or exceed the standard for capital returns that its peers have recently set. However, it must match distributions above $4 per share with preferred equity redemptions (including a 10% premium). In practice, the simultaneous deployment of surplus cash to preferred and common shareholders is probably the best outcome as the preferred equity incurs interest at a relatively high rate (8%).

Analyst Notes Archive

Occidental Petroleum: Expected Midstream Savings Drive an Incremental 7% Valuation Increase

Joshua Aguilar, Director, 3 Sep 2024

After reassessing our valuation of no-moat Occidental Petroleum, we lift our fair value estimate by 7% to $62. We previously did not incorporate the impact from Oxy’s midstream business benefiting from a reduction in crude oil and transportation rates from the Permian to the Gulf Coast. Management expects these lower rates will hit financials by the end of the of the third quarter of 2025. The company expects annualized savings from these rate reductions of $300 million to $400 million, with 40% of savings starting in 2025, and the full savings realized in 2026. We have no reason to disagree with this assertion and model the midpoint of this expectation.

Management also expects an incremental EBITDA of $300 million to $400 million from the so-called “Battleground” facility expansion in OxyChem, in concert with plant enhancement projects, but we were already fully baking in this benefit. Even while we bake in benefits from Oxy's low carbon venture investments, our revised $62 fair value estimate puts us as the low end of FactSet consensus price targets. Since the 3-star rated stock’s $57 market price only represents an 8% discount in a Very High uncertainty rated stock, we’d recommend a much bigger pullback before investors consider initiating a

Morningstar Equity Analyst Report | Report as of 2 Nov 2024 04:09, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 7 of 19

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
50.11 USD 31 Oct 2024	62.00 USD 3 Sep 2024 13:52, UTC	0.81	45.42 USD Bil 1 Nov 2024	None	Mid Value	Very High	Standard	2 Oct 2024 05:00, UTC

position.

Oxy Earnings: Cost-Efficient Production Drives 7% Fair Value Estimate Increase Joshua Aguilar, Director, 8 Aug 2024

No-moat Occidental produced solid second-quarter results. Total hydrocarbon production of 1,258 thousand barrels of oil equivalent per day, or mboe/d, marginally exceeded the midpoint of guidance, but we were anticipating modest production outperformance. Even so, Oxy's strong production was carried out in a cost-efficient manner.

Lease operating expenses, in particular, fell faster than we anticipated. This helped Oxy's overall costs come in 7% below our expectations, which translated to better-than-expected earnings. Management effectively raised guidance since it maintained its outlook, even with the expected divestiture of 15 mboe/d. Therefore, we raise our fair value estimate to $58 from $54, relatively in line with the stock's performance following the second-quarter earnings result.

Strong production in the exploration and production or E&P industry is primarily driven by reservoir quality, in our view, and the Delaware is a premier US shale asset. That said, at least part of Oxy's cost-efficient production appears driven by its secondary development in the Delaware, which leverages existing infrastructure to improve asset returns. While we typically think of operating initiatives as transitory in the space, this strategy seems to work well for Oxy now as it's boasting better production rates than industry averages in the basin. In fact, a majority of the production outperformance relative to prior guidance was due to results in the Permian.

Cost-efficient production is also good for shareholders, because all else equal, it translates to stronger free cash flow. During the quarter, free cash flow (before working capital) of $1.3 billion exceeded our expectations of $1.2 billion. While some calls on cash favor the bondholder and will go toward debt reduction efforts, management did return roughly $370 million to shareholders, mostly in the form of dividends.

OPEC+ Production Cut Extensions Send Clear Signal That Oil Markets Remain Oversupplied Stephen Ellis, Strategist, 3 Jun 2024

The complexity of OPEC's meeting outcome from June 2 should not obscure our view that it continues to operate from a position of weakness in an oversupplied market, pointing to near-term oil price weakness. We anticipate oil prices are more likely to hit $70 a barrel (WTI) and perhaps below $65 by the end of 2024. OPEC has three separate cuts in progress at the moment, totaling 5.86 million barrels per day. A groupwide cut of about 2 million barrels per day was originally set to expire at the end of 2024 but was extended to the end of 2025. Similarly, a 1.7 million barrels per day voluntary cut by certain members was also extended to the end of 2025 from the end of 2024. Finally, a second 2.2

million barrels per day voluntary cut by certain members was extended in full for another quarter, as it was due to expire at the end of June, before gradually being phased out by September 2025. Undervalued options have been harder to find in the energy space recently, but we favor SLB, Enbridge, TC Energy, APA, and Exxon Mobil.

The key phrase in the announcement, in our view, was that the monthly increases from the reversal of the 2.2 million barrels per day cut can be "paused or reversed subject to market conditions." In other words, we could expect the 2.2 million barrels per day reversal to be placed on hold, if the market remains oversupplied.

The extensions look particularly weak when OPEC is assuming about 2.25 million barrels per day of oil demand growth in 2024, while the International Energy Agency is less than half of that at 1.06 million barrels per day. Further, the International Energy Agency and US Energy Information Administration have been cutting demand growth forecasts for 2024, while OPEC's forecast has been unchanged since the start of 2024. In other words, OPEC's own demand forecast looks potentially stale, and even if OPEC believes it remains accurate, it has now been undercut by the extensions of production cuts.

Oxy Earnings: CrownRock Transaction Should Still Close, but Not Until the Third Quarter of 2024

Joshua Aguilar, Director, 8 May 2024

Following our review of no-moat Occidental Petroleum's first-quarter results, we reduced our fair value estimate by 7% to $53 per share. Our lower fair value estimate reflects lower West Texas Intermediate oil strip prices, down to the high 70s from the mid-80s. We originally expected management to close the CrownRock acquisition by the end of the first quarter, as it said on its December 2023 special call that it hoped to. However, it now appears that the CrownRock transaction will close sometime in the third quarter of 2024 as both Occidental and CrownRock work with the US Federal Trade Commission. Production results came in quite a bit lower than we originally expected, which in turn hurt our valuation because the transaction hasn't closed yet. We point out, however, that Occidental's 2024 production guidance excludes the impacts from the CrownRock acquisition, and we still model a 100% probability that the deal will close.

During the first quarter, Occidental delivered total hydrocarbon production of 1,172 thousand barrels of oil equivalent per day. Total production fell just slightly below the midpoint of guidance, with various puts and takes. The Rockies exhibited better-than-expected growth thanks to strong well performance in the DJ Basin and better production uptime, among other factors. However, better production there was more than offset by the outage of a third-party pipeline in the Gulf of Mexico. That said, both its midstream and chemical businesses outperformed the company's guidance, with midstream having outperformed the high-end of the guide thanks to better pricing. Moving forward, we expect an accelerated ramp-up of a 20-well pad should support continued production improvements in the Rockies. More importantly, production improvements won't come at the expense of costs. In fact, well design improvements should continue to drive down costs, as we saw evidence of in both the Rockies and in the Permian.

Occidental Petroleum: Possible Permian Sale Aims to Create Financial Flexibility Joshua Aguilar, Director, 6 May 2024

Reuters reports that no-moat-rated Occidental is contemplating a potential asset sale of $1 billion. As part of the deal, Occidental management would sell less than 30,000 net acres of leases located in the Permian's Barilla Draw. This acreage represents roughly 5% and less than 2% of Permian and total company production, respectively. The relative quality of the acreage and the moves made to consolidate or "block up" the position make it a good candidate for divestment. Occidental has made trades and acquisitions to enhance its position there over the last decade, even as recently as last year's third quarter. In doing so, it has put together good-quality acreage in sufficient quantity to attract buyers.

This is likely the first of several offerings as management seeks to deleverage quickly after the CrownRock acquisition. The acquisition will increase Occidental's debt/EBITDAX to 1.9 times from 1.3 times at the end of the year. We don't see Occidental's postacquisition debt load as harmful since it adds significant Permian production. However, we recognize that Occidental has historically made poorly timed acquisitions that may incentivize the firm to reduce its leverage early. If the deal proceeds as reported, we believe it would negligibly affect our fair value estimate, so we will wait for firmer details before implementing its impact.

Israel's Response to Iran's Strike Confirms Minimal Escalation View; Oil Markets Remain Oversupplied Stephen Ellis, Strategist, 19 Apr 2024

Israel has launched strikes against Iran in retaliation for an attack on April 14 (see our April 15 note for more analysis). The limited scope of Israel's attack, which also included targets in Syria and Iraq; Iran's subdued response; and the ample warning Israel provided confirm our view that both parties wish to de-escalate tensions. We'd characterize this as a de-escalation attack. This view is in line with broader US and Group of Seven goals.

We reiterate our view that the recent upward movement in oil prices since February 2024 has been largely attributable to geopolitical risks, not supply, and we see more downside risks to $75 a barrel by the end of 2024 compared with a maintained movement beyond $100 a barrel. Saudi Arabia and OPEC+ have more than 5 million barrels per day of supply that can be added back to the markets if needed to cool off an oil price spike.

The US did announce new sanctions on Iran on April 18, but we see them as minimal. The Biden administration is heavily incentivized to keep oil markets calm during an election year. We see this in the type of sanctions announced, which are targeted toward Iranian military entities versus oil-related activities.

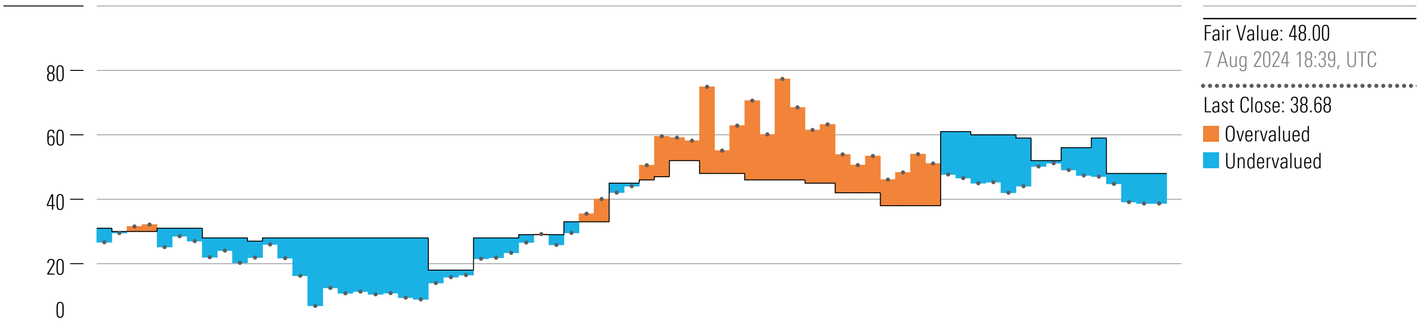
For now, this situation shields Iranian oil exports, which were about 1.5 million-1.6 million barrels per day in early 2024 compared with total Iran oil production of about 3.1 million barrels per day. We remain wary of a potential disruption to the Hormuz Strait, which handles about 30% of the world's crude. However, the majority of the crude that transits the strait heads to Asia, and virtually all of Iran's crude is purchased by China. As a result, the US has very limited influence and ability to pressure Iran, as China is unlikely to stop buying Iranian crude. A more concerted effort by the US to pressure Iran and China via diplomatic means and sanctions is also likely to threaten US-China relationships, creating a new set of challenges.

Morningstar Equity Analyst Report | Report as of 2 Nov 2024 04:09, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 11 of 19

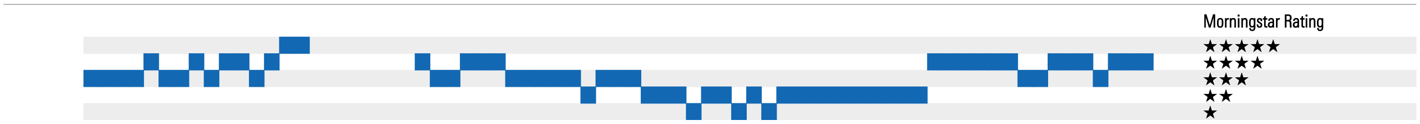
Occidental Petroleum Corp OXY ★★★ 1 Nov 2024 21:38, UTC

Competitors Price vs. Fair Value

Devon Energy Corp DVN

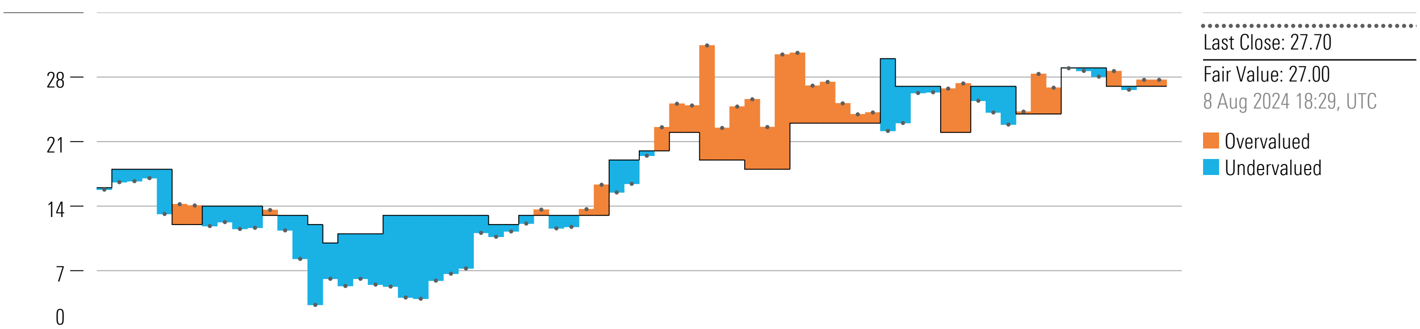


	2019	2020	2021	2022	2023	YTD
Price/Fair Value	0.93	0.88	0.98	1.37	0.76	0.80
Total Return %	16.77	-36.50	191.08	51.37	-21.69	-11.90

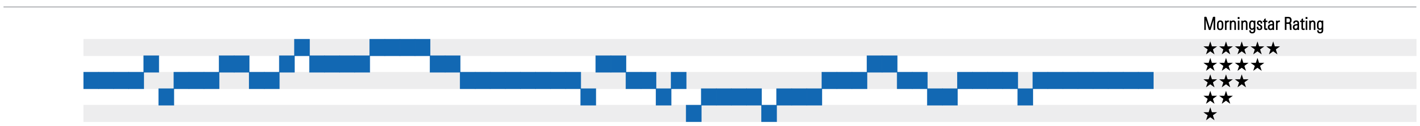


Total Return % as of 31 Oct 2024. Last Close as of 31 Oct 2024. Fair Value as of 7 Aug 2024 18:39, UTC.

Marathon Oil Corp MRO



	2019	2020	2021	2022	2023	YTD
Price/Fair Value	1.04	0.51	0.86	1.18	0.89	1.01
Total Return %	-3.91	-50.29	148.88	66.81	-9.24	16.02



Total Return % as of 31 Oct 2024. Last Close as of 31 Oct 2024. Fair Value as of 8 Aug 2024 18:29, UTC.

Morningstar Equity Analyst Report | Report as of 2 Nov 2024 04:09, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 12 of 19

Occidental Petroleum Corp OXY ★★★ 1 Nov 2024 21:38, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
50.11 USD 31 Oct 2024	62.00 USD 3 Sep 2024 13:52, UTC	0.81	45.42 USD Bil 1 Nov 2024	None	Mid Value	Very High	Standard	2 Oct 2024 05:00, UTC

Morningstar Historical Summary

Financials as of 30 Jun 2024

Fiscal Year, ends 31 Dec	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	TTM
Revenue (USD Bil)	19	12	10	13	18	21	18	26	37	28	13	27
Revenue Growth %	-4.3	-35.4	-19.2	24.0	42.5	17.3	-14.8	45.8	41.1	-22.9	-8.2	-14.0
EBITDA (USD Bil)	5.56	-4.99	2.72	5.68	9.97	7.56	-6.18	13.77	22.07	14.24	6.65	13.93
EBITDA Margin %	28.8	-40.0	26.9	45.4	56.0	36.2	-34.7	53.0	60.3	50.4	52.0	51.4
Operating Income (USD Bil)	6.05	0.48	-1.04	1.10	5.12	2.98	-1.26	4.67	13.67	6.41	2.57	5.59
Operating Margin %	31.3	3.9	-10.3	8.8	28.7	14.3	-7.1	18.0	37.3	22.7	20.1	20.6
Net Income (USD Bil)	0.62	-7.83	-0.57	1.31	4.13	-0.67	-14.83	2.32	13.30	4.70	2.05	4.62
Net Margin %	3.2	-62.7	-5.7	10.4	23.1	-4.7	-88.0	5.8	33.9	13.3	13.3	14.3
Diluted Shares Outstanding (Mil)	781	766	764	766	763	810	919	959	1,002	961	954	954
Diluted Earnings Per Share (USD)	0.79	-10.23	-0.75	1.70	5.39	-1.22	-17.06	1.58	12.40	3.90	1.78	4.05
Dividends Per Share (USD)	2.88	2.97	3.02	3.06	3.10	3.14	0.82	0.04	0.52	0.72	0.44	0.80

Valuation as of 31 Oct 2024

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Recent Qtr	TTM
Price/Sales	2.6	3.7	5.4	4.8	2.8	1.7	0.8	1.2	1.7	2.0	1.8	1.8
Price/Earnings	11.2	-8.7	-8.7	104.2	12.1	29.2	-1.1	-39.2	5.2	13.0	13.4	13.0
Price/Cash Flow	5.6	9.9	15.8	12.6	7.0	4.1	3.5	3.1	3.9	4.4	4.6	4.4
Dividend Yield %	3.57	4.39	4.24	4.15	5.05	7.62	4.74	0.14	0.83	1.21	1.63	1.68
Price/Book	1.4	1.7	2.4	2.7	2.1	1.4	1.6	3.0	3.0	2.5	2.0	2.0
EV/EBITDA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Operating Performance / Profitability as of 30 Jun 2024

Fiscal Year, ends 31 Dec	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	TTM
ROA %	1.0	-15.7	-1.3	3.1	9.6	-1.3	-16.7	2.0	16.8	5.1	2.3	5.3
ROE %	1.6	-26.4	-2.5	6.2	19.6	-4.3	-94.2	15.6	80.4	17.7	7.4	17.5
ROIC %	1.3	-20.6	-1.5	5.0	13.9	-0.8	-26.3	6.0	32.3	10.3	4.6	10.5
Asset Turnover	0.3	0.3	0.2	0.3	0.4	0.3	0.2	0.3	0.5	0.4	0.2	0.4

Financial Leverage

Fiscal Year, ends 31 Dec	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Recent Qtr	TTM
Debt/Capital %	16.4	22.0	31.4	31.2	32.4	53.5	66.2	59.6	40.3	38.9	37.3	—
Equity/Assets %	62.1	56.1	49.9	49.0	48.6	22.8	11.0	14.1	28.0	29.7	31.2	—
Total Debt/EBITDA	1.2	-1.7	3.6	1.7	1.0	7.4	-12.7	4.2	1.4	2.0	4.2	—
EBITDA/Interest Expense	72.2	-34.0	9.3	16.4	25.6	7.1	-4.3	8.5	21.4	15.1	12.4	13.7

Morningstar Analyst Historical/Forecast Summary as of 30 Aug 2024

Financials

			Estimates		
Fiscal Year, ends 31 Dec 2023	2022	2023	2024	2025	2026
Revenue (USD Mil)	37,095	28,918	28,816	31,893	34,963
Revenue Growth %	41.0	-22.0	-0.4	10.7	9.6
EBITDA (USD Mil)	22,073	14,239	15,589	18,086	18,705
EBITDA Margin %	59.5	49.2	54.1	56.7	53.5
Operating Income (USD Mil)	16,190	8,693	8,590	8,941	9,266
Operating Margin %	43.6	30.1	29.8	28.0	26.5
Net Income (USD Mil)	12,504	3,773	4,039	4,538	5,212
Net Margin %	33.7	13.1	14.0	14.2	14.9
Diluted Shares Outstanding (Mil)	1,002	961	956	959	959
Diluted Earnings Per Share(USD)	12.48	3.93	4.22	4.73	5.44
Dividends Per Share(USD)	0.39	0.71	0.88	0.88	0.88

Forward Valuation

			Estimates		
	2022	2023	2024	2025	2026
Price/Sales	1.5	1.8	1.6	1.5	1.3
Price/Earnings	5.0	15.2	11.7	10.5	9.1
Price/Cash Flow	—	—	—	—	—
Dividend Yield %	0.6	1.2	1.8	1.8	1.8
Price/Book	2.1	1.9	1.4	1.3	1.1
EV/EBITDA	4.0	5.7	4.7	4.1	3.9

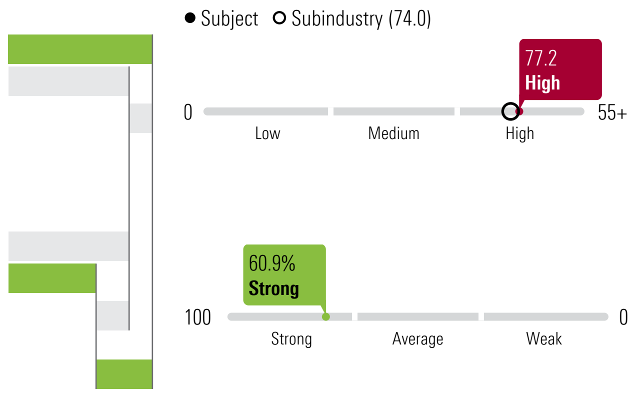
Morningstar Equity Analyst Report | Report as of 2 Nov 2024 04:09, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC.

Occidental Petroleum Corp OXY ★★★ 1 Nov 2024 21:38, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
50.11 USD 31 Oct 2024	62.00 USD 3 Sep 2024 13:52, UTC	0.81	45.42 USD Bil 1 Nov 2024	None	Mid Value	Very High	Standard	2 Oct 2024 05:00, UTC

ESG Risk Rating Breakdown

Exposure	
Company Exposure[1]	77.2
– Manageable Risk	64.7
Unmanageable Risk[2]	**12.5**
Management	
Manageable Risk	64.7
– Managed Risk[3]	39.4
Management Gap[4]	**25.3**
Overall Unmanaged Risk	**37.8**



- Exposure represents a company's vulnerability to ESG risks driven by their business model
- Exposure is assessed at the Subindustry level and then specified at the company level
- Scoring ranges from 0-55+ with categories of low, medium, and high-risk exposure

- Management measures a company's ability to manage ESG risks through its commitments and actions
- Management assesses a company's efficiency on ESG programs, practices, and policies
- Management score ranges from 0-100% showing how much manageable risk a company is managing

ESG Risk Rating

ESG Risk Ratings measure the degree to which a company's value is impacted by environmental, social, and governance risks, by evaluating the company's ability to manage the ESG risks it faces.

1. A company's Exposure to material ESG issues 2. Unmanageable Risk refers to risks that are inherent to a particular business model that cannot be managed by programs or initiatives 3. Managed Risk = Manageable Risk multiplied by a Management score of 60.9% 4. Management Gap assesses risks that are not managed, but are considered manageable 5. ESG Risk Rating Assessment = Overall Unmanaged Risk = Management Gap plus Unmanageable Risk

ESG Risk Rating Assessment[5]

ESG Risk Rating is of Oct 02, 2024. Highest Controversy Level is as of Oct 08, 2024. Sustainalytics Subindustry: Integrated Oil & Gas. Sustainalytics provides Morningstar with company ESG ratings and metrics on a monthly basis and as such, the ratings in Morningstar may not necessarily reflect current Sustainalytics' scores for the company. For the most up to date rating and more information, please visit: sustainalytics.com/esg-ratings/.

Peer Analysis 02 Oct 2024

Peers are selected from the company's Sustainalytics-defined Subindustry and are displayed based on the closest market cap values

Company Name	Exposure			Management			ESG Risk Rating		
Occidental Petroleum Corp	77.2 | High	0	55+	60.9 | Strong	100	0	37.8 | High	0	40+
Marathon Oil Corp	74.5 | High	0	55+	56.1 | Strong	100	0	39.4 | High	0	40+
Hess Corp	78.5 | High	0	55+	70.7 | Strong	100	0	32.0 | High	0	40+
Devon Energy Corp	71.3 | High	0	55+	66.3 | Strong	100	0	31.6 | High	0	40+
Pioneer Natural Resources Co	65.9 | High	0	55+	68.0 | Strong	100	0	28.1 | Medium	0	40+

Morningstar Equity Analyst Report | Report as of 2 Nov 2024 04:09, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 14 of 19

Appendix
Historical Morningstar Rating

Occidental Petroleum Corp OXY 1 Nov 2024 21:38, UTC

Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
—	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
Dec 2023	Nov 2023	Oct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
Dec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
★★★	★★★	★★	★★	★★	★★	★★	★★	★★★	★★★	★★★	★★★★
Dec 2021	Nov 2021	Oct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
★★★★	★★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
Dec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
★★★	★★★	★★★★	★★★★	★★★	★★★	★★★	★★★	★★★★	★★★★	★★★★	★★★
Dec 2019	Nov 2019	Oct 2019	Sep 2019	Aug 2019	Jul 2019	Jun 2019	May 2019	Apr 2019	Mar 2019	Feb 2019	Jan 2019
★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★	★★	★★★

Devon Energy Corp DVN 1 Nov 2024 21:38, UTC

Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
—	★★★★	★★★★	★★★★	★★★	★★★★	★★★★	★★★★	★★★	★★★	★★★★	★★★★
Dec 2023	Nov 2023	Oct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
★★★★	★★★★	★★★★	★★★★	★★	★★	★★	★★	★★	★★	★★	★★
Dec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
★★	★★	★	★★	★	★★	★★	★	★★	★★	★★	★★★
Dec 2021	Nov 2021	Oct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
★★★	★★★	★★	★★★	★★★	★★★	★★★	★★★	★★★★	★★★★	★★★★	★★★
Dec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
★★★	★★★★	—	—	—	—	—	—	—	★★★★★	★★★★★	★★★★
Dec 2019	Nov 2019	Oct 2019	Sep 2019	Aug 2019	Jul 2019	Jun 2019	May 2019	Apr 2019	Mar 2019	Feb 2019	Jan 2019
★★★	★★★★	★★★★	★★★	★★★★	★★★	★★★	★★★★	★★★	★★★	★★★	★★★

Marathon Oil Corp MRO 1 Nov 2024 21:37, UTC

Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
—	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★	★★★	★★★
Dec 2023	Nov 2023	Oct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
★★★	★★★	★★	★★	★★★	★★★	★★★★	★★★★	★★★	★★★	★★★	★★
Dec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
★★	★★	★	★★	★★	★★	★★	★	★★★	★★	★★★	★★★
Dec 2021	Nov 2021	Oct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
★★★★	★★★★	★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★★
Dec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★	★★★★	★★★★	★★★★	★★★★★	★★★★	★★★
Dec 2019	Nov 2019	Oct 2019	Sep 2019	Aug 2019	Jul 2019	Jun 2019	May 2019	Apr 2019	Mar 2019	Feb 2019	Jan 2019
★★★	★★★★	★★★★	★★★	★★★	★★★	★★	★★★★	★★★	★★★	★★★	★★★

Research Methodology for Valuing Companies

Overview

At the heart of our valuation system is a detailed projection of a company's future cash flows, resulting from our analysts' research. Analysts create custom industry and company assumptions to feed income statement, balance sheet, and capital investment assumptions into our globally standardized, proprietary discounted cash flow, or DCF, modeling templates. We use scenario analysis, indepth competitive advantage analysis, and a variety of other analytical tools to augment this process. Moreover, we think analyzing valuation through discounted cash flows presents a better lens for viewing cyclical companies, high-growth firms, businesses with finite lives (e.g., mines), or companies expected to generate negative earnings over the next few years. That said, we don't dismiss multiples altogether but rather use them as supporting cross-checks for our DCF-based fair value estimates. We also acknowledge that DCF models offer their own challenges (including a potential proliferation of estimated inputs and the possibility that the method may miss shortterm market-price movements), but we believe these negatives are mitigated by deep analysis and our longterm approach.

Morningstar's equity research group ("we," "our") believes that a company's intrinsic worth results from the future cash flows it can generate. The Morningstar Rating for stocks identifies stocks trading at a discount or premium to their intrinsic worth—or fair value estimate, in Morningstar terminology. Five-star stocks sell for the biggest risk adjusted discount to their fair values, whereas 1-star stocks trade at premiums to their intrinsic worth.

Four key components drive the Morningstar rating: (1) our assessment of the firm's economic moat, (2) our estimate of the stock's fair value, (3) our uncertainty around that fair value estimate and (4) the current market price. This process ultimately culminates in our singlepoint star rating.

1. Economic Moat

The concept of an economic moat plays a vital role not only in our qualitative assessment of a firm's long-term investment potential, but also in the actual calculation of our fair value estimates. An economic moat is a structural feature that allows a firm to sustain excess profits over a long period of time. We define economic profits as returns on invested capital (or ROIC) over and above our estimate of a firm's cost of capital, or weighted average cost of capital (or WACC). Without a moat, profits are more susceptible to competition. We have identified five sources of economic moats: intangible assets, switching costs, network effect, cost advantage, and efficient scale.

Companies with a narrow moat are those we believe are more likely than not to achieve normalized excess returns for at least the next 10 years. Wide-moat companies are those in which we have very high confidence that excess returns will remain for 10 years, with excess returns more likely than not to remain for at least 20 years. The longer a firm generates economic profits, the higher its intrinsic value. We believe low-quality, no-moat companies will see their normalized returns gravitate toward the firm's cost of capital more quickly than companies with moats.

When considering a company's moat, we also assess whether there is a substantial threat of value destruction, stemming from risks related to ESG, industry disruption, financial health, or other idiosyncratic issues. In this context, a risk is considered potentially value destructive if its occurrence would eliminate a firm's economic profit on a cumulative or midcycle basis. If we deem the probability of occurrence sufficiently high, we would not characterize the company as possessing an economic moat.

2. Estimated Fair Value

Combining our analysts' financial forecasts with the firm's economic moat helps us assess how long returns on invested capital are likely to exceed the firm's cost of capital. Returns of firms with a wide economic moat rating are assumed to fade to the perpetuity period over a longer period of time than the returns of narrow-moat firms, and both will fade slower than no-moat firms, increasing our estimate of their intrinsic value.

Our model is divided into three distinct stages:

Stage I: Explicit Forecast

In this stage, which can last five to 10 years, analysts make full financial statement forecasts, including items such as revenue, profit margins, tax rates, changes in workingcapital accounts, and capital spending. Based on these projections, we calculate earnings before interest, after taxes (EBI) and the net new investment (NNI) to derive our annual free cash flow forecast.

Stage II: Fade

The second stage of our model is the period it will take the company's return on new invested capital—the return on capital of the next dollar invested ("RONIC")—to decline (or rise) to its cost of capital. During the Stage II period, we use a formula to approximate cash flows in lieu of explicitly modeling the income statement, balance sheet, and cash flow statement as we do in Stage I. The length of the second stage depends on the strength of the company's economic moat. We forecast this period to last anywhere from one year (for companies with no economic moat) to 10–15 years or more (for wide-moat companies). During this period, cash flows are forecast using four assumptions: an average growth rate for EBI over the period, a normalized investment rate, average return on new invested capital (RONIC), and the number of years until perpetuity, when excess returns cease. The investment rate and return on new invested capital decline until a perpetuity value is calculated. In the case of firms that do not earn their cost of capital, we assume marginal ROICs rise to the firm's cost of capital (usually attributable to less reinvestment), and we may truncate the second stage.

Stage III: Perpetuity

Once a company's marginal ROIC hits its cost of capital, we calculate a continuing value, using a standard perpetuity formula. At perpetuity, we assume that any growth or decline or investment in the business neither creates nor destroys value and that any new investment provides a return in line with estimated WACC.

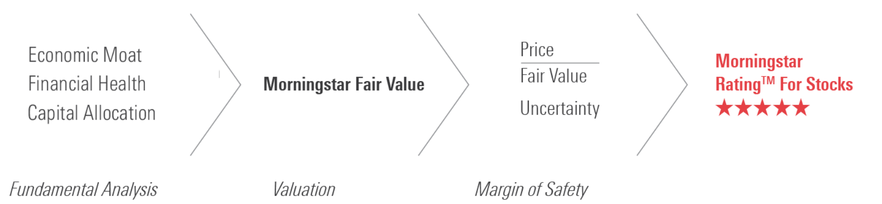
Because a dollar earned today is worth more than a dollar earned tomorrow, we discount our projections of cash flows in stages I, II, and III to arrive at a total present value of expected future cash flows. Because we are modeling free cash flow to the firm—representing cash available to provide a return to all capital providers—we discount future cash flows using the WACC, which is a weighted average of the costs of equity, debt, and preferred stock (and any other funding sources), using expected future proportionate long-term, market-value weights.

3. Uncertainty Around That Fair Value Estimate

Morningstar's Uncertainty Rating is designed to capture the range of potential outcomes for a company's intrinsic value. This rating is used to assign the margin of safety required before investing, which in turn explicitly drives our stock star rating system. The Uncertainty Rating is aimed at identifying the confidence we should have in assigning a fair value estimate for a given stock.

Our Uncertainty Rating is meant to take into account anything that can increase the potential dispersion of future outcomes for the intrinsic value of a company, and any-

Morningstar Equity Research Star Rating Methodology



Morningstar Equity Analyst Report | Report as of 2 Nov 2024 04:09, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 16 of 19

Research Methodology for Valuing Companies

thing that can affect our ability to accurately predict these outcomes. The rating begins with a suggested rating produced by a quantitative process based on the trailing 12-month standard deviation of daily stock returns. An analyst overlay is then applied, with analysts using the suggested rating, historical rating data, and their own knowledge of the company to inform them as they make the final Uncertainty Rating decision. Ultimately, the rating decision rests with the analyst. Analysts take into account many characteristics when making their final decision, including cyclical factors, operational and financial factors such as leverage, company-specific events, ESG risks, and anything else that might increase the potential dispersion of future outcomes and our ability to estimate those outcomes.

Our recommended margin of safety—the discount to fair value demanded before we'd recommend buying or selling the stock—widens as our uncertainty of the estimated value of the equity increases. The more uncertain we are about the potential dispersion of outcomes, the greater the discount we require relative to our estimate of the value of the firm before we would recommend the purchase of the shares. In addition, the Uncertainty Rating provides guidance in portfolio construction based on risk tolerance.

Our Uncertainty Ratings are: Low, Medium, High, Very High, and Extreme.

Qualitative Analysis Uncertainty Ratings	Margin of Safety ★★★★★Rating	★Rating
Low	20% Discount	25% Premium
Medium	30% Discount	35% Premium
High	40% Discount	55% Premium
Very High	50% Discount	75% Premium
Extreme	75% Discount	300% Premium

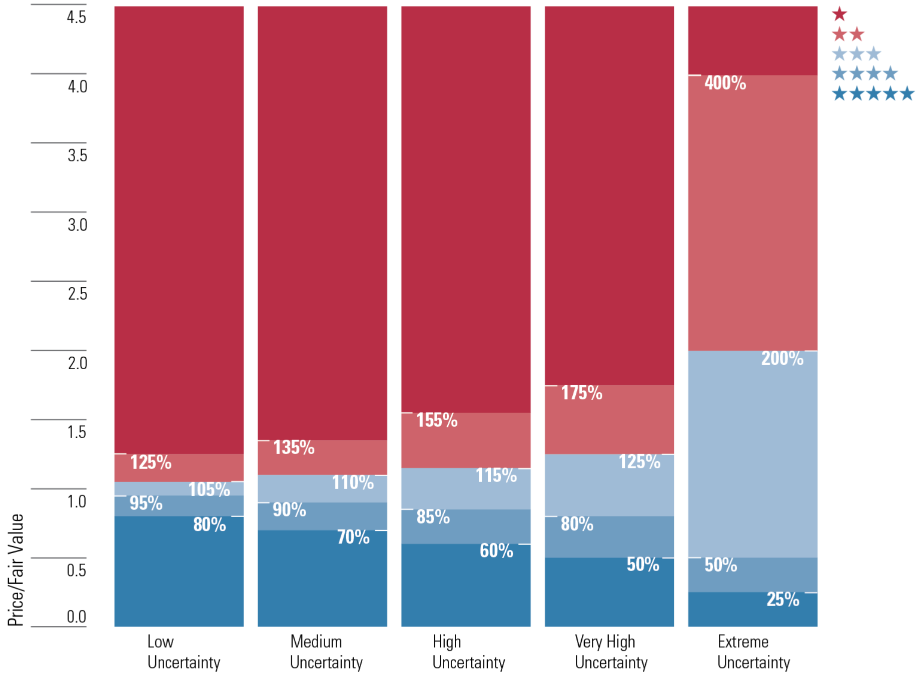
Our uncertainty rating is based on the interquartile range, or the middle 50% of potential outcomes, covering the 25th percentile–75th percentile. This means that when a stock hits 5 stars, we expect there is a 75% chance that the intrinsic value of that stock lies above the current market price. Similarly, when a stock hits 1 star, we expect there is a 75% chance that the intrinsic value of that stock lies below the current market price.

4. Market Price

The market prices used in this analysis and noted in the report come from exchange on which the stock is listed which we believe is a reliable source.

For more details about our methodology, please go to https://shareholders.morningstar.com

Morningstar Equity Research Star Rating Methodology



Morningstar Star Rating for Stocks

Once we determine the fair value estimate of a stock, we compare it with the stock's current market price on a daily basis, and the star rating is automatically re-calculated at the market close on every day the market on which the stock is listed is open. Our analysts keep close tabs on the companies they follow, and, based on thorough and ongoing analysis, raise or lower their fair value estimates as warranted.

Please note, there is no predefined distribution of stars. That is, the percentage of stocks that earn 5 stars can fluctuate daily, so the star ratings, in the aggregate, can serve as a gauge of the broader market's valuation. When there are many 5-star stocks, the stock market as a whole is more undervalued, in our opinion, than when very few companies garner our highest rating.

We expect that if our base-case assumptions are true the market price will converge on our fair value estimate over time generally within three years (although it is impossible to predict the exact time frame in which market prices may adjust).

Our star ratings are guideposts to a broad audience and individuals must consider their own specific investment goals, risk tolerance, tax situation, time horizon, income needs, and complete investment portfolio, among other factors.

The Morningstar Star Ratings for stocks are defined below:

★★★★★ We believe appreciation beyond a fair risk adjusted return is highly likely over a multiyear time frame. Scenario analysis developed by our analysts indicates that the current market price represents an excessively pessimistic outlook, limiting downside risk and maximizing upside potential.

★★★★ We believe appreciation beyond a fair risk-adjusted return is likely.

★★★ Indicates our belief that investors are likely to receive a fair risk-adjusted return (approximately cost of equity).

★★ We believe investors are likely to receive a less than fair risk-adjusted return.

★ Indicates a high probability of undesirable risk-adjusted returns from the current market price over a multiyear time frame, based on our analysis. Scenario analysis by our analysts indicates that the market is pricing in an excessively optimistic outlook, limiting upside potential and leaving the investor exposed to Capital loss.

Other Definitions

Last Price: Price of the stock as of the close of the market of the last trading day before date of the report.

Capital Allocation Rating: Our Capital Allocation (or Stewardship) Rating represents our assessment of the quality of management's capital allocation, with particular emphasis on the firm's balance sheet, investments, and shareholder distributions. Analysts consider compan-

Research Methodology for Valuing Companies

ies' investment strategy and valuation, balance sheet management, and dividend and share buyback policies. Corporate governance factors are only considered if they are likely to materially impact shareholder value, though either the balance sheet, investment, or shareholder distributions. Analysts assign one of three ratings: "Exemplary", "Standard", or "Poor". Analysts judge Capital Allocation from an equity holder's perspective. Ratings are determined on a forward looking and absolute basis. The Standard rating is most common as most managers will exhibit neither exceptionally strong nor poor capital allocation.

Capital Allocation (or Stewardship) analysis published prior to Dec. 9, 2020, was determined using a different process. Beyond investment strategy, financial leverage, and dividend and share buyback policies, analysts also considered execution, compensation, related party transactions, and accounting practices in the rating.

Capital Allocation Rating: Our Capital Allocation (or Stewardship) Rating represents our assessment of the quality of management's capital allocation, with particular emphasis on the firm's balance sheet, investments, and shareholder distributions. Analysts consider companies' investment strategy and valuation, balance sheet management, and dividend and share buyback policies. Corporate governance factors are only considered if they are likely to materially impact shareholder value, though either the balance sheet, investment, or shareholder distributions. Analysts assign one of three ratings: "Exemplary", "Standard", or "Poor". Analysts judge Capital Allocation from an equity holder's perspective. Ratings are determined on a forward looking and absolute basis. The Standard rating is most common as most managers will exhibit neither exceptionally strong nor poor capital allocation.

Capital Allocation (or Stewardship) analysis published prior to Dec. 9, 2020, was determined using a different process. Beyond investment strategy, financial leverage, and dividend and share buyback policies, analysts also considered execution, compensation, related party transactions, and accounting practices in the rating.

Sustainalytics ESG Risk Rating Assessment: The ESG Risk Rating Assessment is provided by Sustainalytics; a Morningstar company.

Sustainalytics' ESG Risk Ratings measure the degree to which company's economic value at risk is driven by environment, social and governance (ESG) factors.

Sustainalytics analyzes over 1,300 data points to assess a company's exposure to and management of ESG risks. In other words, ESG Risk Ratings measures a company's unmanaged ESG Risks represented as a quantitative score. Unmanaged Risk is measured on an open-ended scale starting at zero (no risk) with lower scores representing less unmanaged risk and, for 95% of cases, the unmanaged ESG Risk score is below 50.

Based on their quantitative scores, companies are grouped into one of five Risk Categories (negligible, low, medium, high, severe). These risk categories are absolute, meaning that a 'high risk' assessment reflects a comparable degree of unmanaged ESG risk across all subindustries covered.

The ESG Risk Rating Assessment is a visual representation of Sustainalytics ESG Risk Categories on a 1 to 5 scale. Companies with Negligible Risk = 5 Globes, Low Risk = 4, Medium Risk = 3 Globes, High Risk = 2 Globes, Severe Risk = 1 Globe. For more information, please visit sustainalytics.com/esg-ratings/

Ratings should not be used as the sole basis in evaluating a company or security. Ratings involve unknown risks and uncertainties which may cause our expectations not to occur or to differ significantly from what was expected and should not be considered an offer or solicitation to buy or sell a security.

Risk Warning

Please note that investments in securities are subject to market and other risks and there is no assurance or guarantee that the intended investment objectives will be achieved. Past performance of a security may or may not be sustained in future and is no indication of future performance. A security investment return and an investor's principal value will fluctuate so that, when redeemed, an investor's shares may be worth more or less than their original cost. A security's current investment performance may be lower or higher than the investment performance noted within the report. Morningstar's Uncertainty Rating serves as a useful data point with respect to sensitivity analysis of the assumptions used in our determining a fair value price.

General Disclosure

Unless otherwise provided in a separate agreement, recipients accessing this report may only use it in the country in which the Morningstar distributor is based. Unless stated otherwise, the original distributor of the report is Morningstar Research Services LLC, a U.S.A. domiciled financial institution.

This Report is for informational purposes, should not be the sole piece of information used in making an investment decision, and has no regard to the specific investment objectives, financial situation or particular needs of any specific recipient. This publication is intended to provide information to assist investors in making their own investment decisions, not to provide investment advice to any specific investor. Therefore, investments discussed herein may not be suitable for all investors; investors must exercise their own independent judgment as to the suitability of such investments and recommendations in the light of their own investment objectives, experience, taxation status and financial position. Morningstar encourages Report recipients to read all relevant issue documents (e.g., prospectus) pertaining to the security concerned, including without limitation, information relevant to its investment objectives, risks, and costs before making an investment decision and when deemed necessary, to seek the advice of a financial, legal, tax, and/or accounting professional. The information, data, analyses and opinions presented herein are not warranted to be accurate, correct, complete or timely. Unless otherwise provided in a separate agreement, neither Morningstar, Inc. or the Equity Research Group represents that the report contents meet all of the presentation and/or disclosure standards applicable in the jurisdiction the recipient is located.

Except as otherwise required by law or provided for in a separate agreement, the analyst, Morningstar, Inc. and the Equity Research Group and their officers, directors and employees shall not be responsible or liable for any trading decisions, damages or other losses resulting from, or related to, the information, data, analyses or opinions within the report.

The Report and its contents are not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to law or regulation or which would subject Morningstar, Inc. or its affiliates to any registration or licensing requirements in such jurisdiction.

Where this report is made available in a language other than English and in the case of inconsistencies between the English and translated versions of the report, the English version will control and supersede any ambiguities associated with any part or section of a report that has been issued in a foreign language. Neither the analyst, Morningstar, Inc., or the Equity Research Group guarantees the accuracy of the translations.

This report may be distributed in certain localities, countries and/or jurisdictions ("Territories") by independent third parties or independent intermediaries and/or distributors ("Distributors"). Such Distributors are not acting as agents or representatives of the analyst, Morningstar, Inc. or the Equity Research Group. In Territories where a Distributor distributes our report, the Distributor is solely responsible for complying with all applicable regulations, laws, rules, circulars, codes and guidelines established by local and/or regional regulatory bodies, including laws in

Research Methodology for Valuing Companies

connection with the distribution third-party research reports.

Conflicts of Interest

- No interests are held by the analyst with respect to the security subject of this investment research report.
- Morningstar, Inc. may hold a long position in the security subject of this investment research report that exceeds 0.5% of the total issued share capital of the security. To determine if such is the case, please click http://msi.morningstar.com and http://mdi.morningstar.com
- Analysts' compensation is derived from Morningstar, Inc.'s overall earnings and consists of salary, bonus and in some cases restricted stock.
- Neither Morningstar, Inc. or the Equity Research Group receives commissions for providing research nor do they charge companies to be rated.
- Morningstar's overall earnings are generated in part by the activities of the Investment Management and Research groups, and other affiliates, who provide services to product issuers.
- Morningstar employees may not pursue business and employment opportunities outside Morningstar within the investment industry (including but not limited to, working as a financial planner, an investment professional or investment professional representative, a broker-dealer or broker-dealer agent, a financial writer, reporter, or analyst) without the approval of Morningstar's Legal and if applicable, Compliance teams.
- Neither Morningstar, Inc. or the Equity Research Group is a market maker or a liquidity provider of the security noted within this report.
- Neither Morningstar, Inc. or the Equity Research Group has been a lead manager or co-lead manager over the previous 12-months of any publicly disclosed offer of financial instruments of the issuer.
- Morningstar, Inc.'s investment management group does have arrangements with financial institutions to provide portfolio management/investment advice some of which an analyst may issue investment research reports on. However, analysts do not have authority over Morningstar's investment management group's business arrangements nor allow employees from the investment management group to participate or influence the analysis or opinion prepared by them.
- Morningstar, Inc. is a publicly traded company (Ticker Symbol: MORN) and thus a financial institution the security of which is the subject of this report may own more than 5% of Morningstar, Inc.'s total outstanding shares. Please access Morningstar, Inc.'s proxy statement, "Security Ownership of Certain Beneficial Owners and Management" section https://shareholders.morningstar.com/investor-relations/financials/sec-filings/default.aspx
- Morningstar, Inc. may provide the product issuer or its related entities with services or products for a fee and on an arms' length basis including software products and licenses, research and consulting services, data services, licenses to republish our ratings and research in their promotional material, event sponsorship and website advertising.

Further information on Morningstar, Inc.'s conflict of interest policies is available from http://global.morningstar.com/equitydisclosures. Also, please note analysts are subject to the CFA Institute's Code of Ethics and Standards of Professional Conduct.

Risk Warning Please note that investments in securities are subject to market and other risks and there is no assurance or guarantee that the intended investment objectives will be achieved. Past performance of a security may or may not be sustained in future and is no indication of future performance. A security's investment return and an investor's principal value will fluctuate so that, when redeemed, an investor's shares may be worth more or less than their original cost. A security's current investment performance may be lower or higher than the investment performance noted within the report. For investments in foreign markets there are further risks, generally based on exchange rate changes or changes in political and social conditions.

For more information about Morningstar's methodologies, please visit global.morningstar.com/equitydisclosures

For a list of securities which the Equity Research Group currently covers and provides written analysis on please contact your local Morningstar office. In addition, for historical analysis of securities covered, including their fair value estimate, please contact your local office.

For recipients in Australia: This Report has been issued and distributed in Australia by Morningstar Australasia Pty Ltd (ABN: 95 090 665 544; ASFL: 240892). Morningstar Australasia Pty Ltd is the provider of the general advice ('the Service') and takes responsibility for the production of this report. The Service is provided through the research of investment products.

To the extent the Report contains general advice it has been prepared without reference to an investor's objectives, financial situation or needs. Investors should consider the advice in light of these matters and, if applicable, the relevant Product Disclosure Statement before making any decision to invest. Refer to our Financial Services Guide (FSG) for more information at http://www.morningstar.com.au/fsg.pdf

For recipients in New Zealand: This report has been issued and distributed by Morningstar Australasia Pty Ltd and/or Morningstar Research Ltd (together 'Morningstar'). This report has been prepared and is intended for distribution in New Zealand to wholesale clients only and has not been prepared for use by New Zealand retail clients (as those terms are defined in the Financial Markets Conduct Act 2013).The information, views and any recommendations in this material are provided for general information purposes only, and solely relate to the companies and investment opportunities specified within. Our reports do not take into account any particular investor's financial situation, objectives or appetite for risk, meaning no representation may be implied as to the suitability of any financial product mentioned for any particular investor. We recommend seeking financial advice before making any investment decision.

For recipients in Hong Kong: The Report is distributed by Morningstar Investment Management Asia Limited, which is regulated by the Hong Kong Securities and Futures Commission to provide services to professional investors only. Neither Morningstar Investment Management Asia Limited, nor its representatives, are acting or will be deemed to be acting as an investment professional to any recipients of this information unless expressly agreed to by Morningstar Investment Management Asia Limited.

For recipients in India: This investment research is issued by Morningstar Investment Adviser India Private Limited. Morningstar Investment Adviser India Private Limited is registered with SEBI as a Portfolio Manager (registration number INP000006156) and as a Research Entity (registration number INH000008686). Morningstar Investment Adviser India Private Limited has not been the subject of any disciplinary action by SEBI or any other legal/regulatory body. Morningstar Investment Adviser India Private Limited is a wholly owned subsidiary of Morningstar Investment Management LLC. In India, Morningstar Investment Adviser India Private Limited has one associate, Morningstar India Private Limited, which provides data-related services, financial data analysis, and software development. The research analyst has not served as an officer, director, or employee of the fund company within the last 12 months, nor have they or their associates engaged in market-making activity for the fund company.The ESG-related information, methodologies, tool, ratings, data and opinions contained or reflected herein are not directed to or intended for use or distribution to India-based clients or users and their distribution to Indian resident individuals or entities is not permitted, and Morningstar/Sustainalytics accepts no responsibility or liability whatsoever for the actions of third parties in this respect.

*The Conflicts of Interest disclosure above also applies to relatives and associates of Manager Research Analysts in India # The Conflicts of Interest disclosure above also applies to associates of Manager Research Analysts in India. The terms and conditions on which Morningstar In-

Research Methodology for Valuing Companies

vestment Adviser India Private Limited offers Investment Research to clients, varies from client to client, and are detailed in the respective client agreement.

For recipients in Japan: The Report is distributed by Ibbotson Associates Japan, Inc., which is regulated by Financial Services Agency, for informational purposes only. Neither Ibbotson Associates Japan, Inc., nor its representatives, are acting or will be deemed to be acting as an investment professional to any recipients of this information.

For recipients in Singapore: For Institutional Investor audiences only. The Report is distributed by Morningstar Investment Adviser Singapore Pte. Limited, which is licensed by the Monetary Authority of Singapore to provide financial advisory services in Singapore. Morningstar Investment Adviser Singapore Pte. Limited is the entity responsible for the creation and distribution of the research services described in this presentation. Investors should consult a financial adviser regarding the suitability of any investment product, taking into account their specific investment objectives, financial situation or particular needs, before making any investment decisions.

For recipients in Korea: The report is distributed by Morningstar Korea Ltd., which has filed to the Financial Services Committee, for informational purposes only. Neither Morningstar Korea Ltd. nor its representatives are acting or will be deemed to be acting as an investment advisor to any recipients of this information.