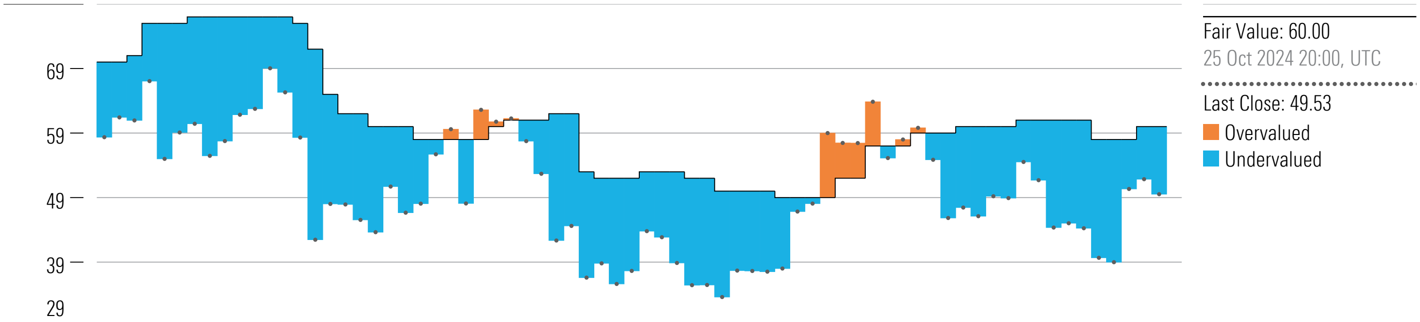
Morningstar Equity Analyst Report | Report as of 15 Nov 2024 00:05, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 1 of 22

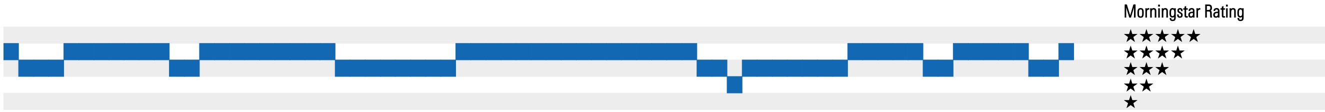
Las Vegas Sands Corp LVS ★★★★ 14 Nov 2024 22:36, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
49.53 USD 13 Nov 2024	60.00 USD 25 Oct 2024 20:00, UTC	0.83	35.74 USD Bil 14 Nov 2024	Narrow	Mid Growth	High	Exemplary	6 Nov 2024 06:00, UTC

Price vs. Fair Value



	2019	2020	2021	2022	2023	YTD	
	0.90	1.03	0.72	0.98	0.82	0.83	Price/Fair Value
	38.56	-12.53	-36.85	27.71	3.20	2.28	Total Return %



Total Return % as of 13 Nov 2024. Last Close as of 13 Nov 2024. Fair Value as of 25 Oct 2024 20:00, UTC.

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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.

Las Vegas Sands Investing Behind Its Macao and Singapore Assets to Support Its Brand Edge

Business Strategy & Outlook Dan Wasiolek, Senior Equity Analyst, 25 Oct 2024

We expect Las Vegas Sands' Macao resorts (54% of 2023 EBITDA) will continue to see healthy revenue growth in 2024 after China's removal of covid-19 restrictions in January of 2023. We also think Las Vegas Sands and the Macao gaming enclave are well positioned for long-term growth. Not only does Sands hold a dominant mass and nongaming position on the attractive Cotai Strip in Macao, but we think it will reinvest back into its assets within the region, strengthening the brand locally. To this point, Sands has recently completed $2.2 billion worth of investments in converting one of its Cotai properties to a London-based theme and upgrading its rooms at its Four Seasons resort. Futher, it will be investing another $1.2 billion in 2024 to renovate rooms at its Conrad and Sheraton locations and upgrade its Cotai arena facility. Meanwhile, Sands' position in the profitable Singapore gaming market (46% of 2023 EBITDA), where a duopoly remains in place through 2030, is buoyed by the company expanding its presence with the renovation of its existing towers in 2023-25 and $8 billion development (including land payments) of a fourth tower, which we think can open in 2031, solidifying our view of the firm's long-term growth.

We see solid Macao visitation and sales growth over the next decade, aided by key infrastructure projects that alleviate Macao's congested traffic (Pac On Terminal expansion and Hong Kong Bridge in 2018, light-rail transit in 2019, and ongoing high-speed rail connections with the mainland) and enhance

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Sector	Industry
Consumer Cyclical	Resorts & Casinos

Business Description

Las Vegas Sands is the world's largest operator of fully integrated resorts, featuring casino, hotel, entertainment, food and beverage, retail, and convention center operations. The company owns the Venetian Macao, Sands Macao, Londoner Macao, Four Seasons Hotel Macao, and Parisian Macao, as well as the Marina Bay Sands resort in Singapore. We expect Sands to open a fourth tower in Singapore in 2031. Its Venetian and Palazzo Las Vegas assets in the US were sold to Apollo and VICI in 2022. With the sale of its Vegas assets, the company generates all its EBITDA from Asia, with its casino operations generating the majority of sales.

the user experience (non-gaming amenities), boosting visitation and spending levels. Although government regulation can present material potential demand headwinds, we continue to forecast annual mid-single-digit steady-state visitation growth in Macao during the latter half of the decade, supported by China outbound travel that we expect will average high-single-digit annual growth during that time. The Chinese government has renewed Sands' Macao gaming license—the source of the company's narrow moat—through 2032. Still, the Macao market is highly regulated, and as a result, the pace and timing of growth are at the discretion of the government.

Bulls Say Dan Wasiolek, Senior Equity Analyst, 25 Oct 2024

- Sands is well positioned to exploit growth opportunities in the attractive Asia casino market with a dominant position in Singapore (around mid-60s EBITDA share) and China (around low-30s EBITDA share).
- The company has a narrow economic moat, thanks to its possession of one of only two licenses to operate casinos in Singapore and one of only six licenses to operate casinos in China.
- Sands' continued investment in Macao ($3 billion during the next 10 years) and Singapore (around $7 billion on renovations and new assets through 2030) supports its competitive position.

Bears Say Dan Wasiolek, Senior Equity Analyst, 25 Oct 2024

- The Chinese government has full control over labor, table allocations, and travel visas and is regulating VIP play at casinos, which can result in volatile periods of growth for the region.
- The company's Macao and Singapore assets stand to face competition from future casino growth in regions like Japan, South Korea, the Philippines, and Thailand.
- Macao's VIP gaming has shown a positive correlation to Chinese stock market and economic slowdowns in the past and is under regulatory pressure.

Economic Moat Dan Wasiolek, Senior Equity Analyst, 25 Oct 2024

We see Las Vegas Sands having a narrow, regulatory intangible asset moat driven by its leading integrated brand and gaming concessions in Macao and Singapore. Historical operating success with its Las Vegas properties aided the company in winning one of only six gaming licenses handed out in Macao and one of two licenses awarded in Singapore, where government regulation creates meaningful barriers of entry for new competition. Additionally, we believe this proven execution and integrated brand identity position the company to receive permits for its remaining undeveloped land in Cotai. Finally, the strength of these intangible assets is evident in the share captured in the key Macao and Singapore markets.

In Macao, favorable supply and demand characteristics support Las Vegas Sands' narrow moat. To this point, there are only six gaming licenses, which the Chinese government awarded for another 10 years through the end of 2032. As a result, we see a continued controlled limited supply of competition for the

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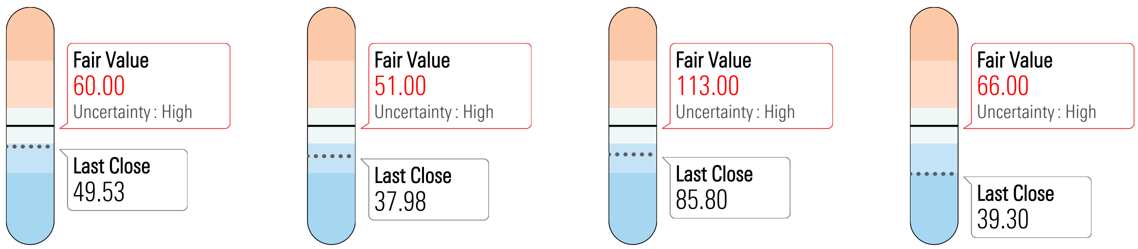
Competitors

	Las Vegas Sands Corp LVS	MGM Resorts International MGM	Wynn Resorts Ltd WYNN	Caesars Entertainment Inc CZR



	Las Vegas Sands Corp LVS	MGM Resorts International MGM	Wynn Resorts Ltd WYNN	Caesars Entertainment Inc CZR
Economic Moat	Narrow	None	Narrow	None
Currency	USD	USD	USD	USD
Fair Value	60.00 25 Oct 2024 20:00, UTC	51.00 4 Nov 2024 20:05, UTC	113.00 7 Nov 2024 19:17, UTC	66.00 30 Oct 2024 20:13, UTC
1-Star Price	93.00	79.05	175.15	102.30
5-Star Price	36.00	30.60	67.80	39.60
Assessment	Undervalued 14 Nov 2024	Undervalued 14 Nov 2024	Undervalued 14 Nov 2024	Undervalued 14 Nov 2024
Morningstar Rating	★★★★14 Nov 2024 22:36, UTC	★★★★14 Nov 2024 22:34, UTC	★★★★14 Nov 2024 22:34, UTC	★★★★14 Nov 2024 22:52, UTC
Analyst	Dan Wasiolek, Senior Equity Analyst	Dan Wasiolek, Senior Equity Analyst	Dan Wasiolek, Senior Equity Analyst	Dan Wasiolek, Senior Equity Analyst
Capital Allocation	Exemplary	Standard	Standard	Exemplary
Price/Fair Value	0.83	0.74	0.82	0.59
Price/Sales	3.27	0.70	1.34	0.75
Price/Book	10.48	3.49	—	1.99
Price/Earning	23.72	12.65	9.50	—
Dividend Yield	1.62%	0.00%	1.17%	0.00%
Market Cap	35.74 Bil	11.40 Bil	10.35 Bil	8.44 Bil
52-Week Range	36.62—55.66	33.44—48.25	71.63—110.38	31.74—50.51
Investment Style	Mid Growth	Mid Value	Small Blend	Small Value

Macao market over the next decade. On the demand side there are 1.4 billion people who live in China and over 2 billion who live within a five-hour flight of Macao, but in 2019, only 27.9 million people from mainland China and 39.4 million total people visited Macao. To put this into perspective, in 2019, Las Vegas had around 42.5 million visits versus a US population of around 330 million at that time (all of whom live within a five-hour flight of Las Vegas), with around an estimated 10% of those visits from international citizens. With the large number of people so close to Macao, it is reasonable to expect continued visitation and revenue growth for the region.

Given the attractive Macao environment, we are encouraged that Sands is investing over $3 billion in its Four Seasons and former Sands Cotai Central resort, converting it into a theme-based facility with upgraded premium suites called the Londoner. We believe these projects will further enhance its already strong positioning in the region. Also, we believe Las Vegas Sands will reinvest some of the proceeds from the sale of its Las Vegas assets (closed in 2022) in renovating its existing Macao assets if permitted to do so. Also, Las Vegas Sands has committed to spend an incremental $3.4 billion in mostly nongaming asset development during the next 10 years as part of its renewed gaming concession in Macao.

Las Vegas Sands has a dominant presence in the supply controlled Macao market. It has a 41% share of the Macao hotel room supply held by gaming operators and around 50% and 80% of the region's nongaming revenue and convention center capacity, respectively. It also has the most attractive locations on the Cotai Strip, which is the best location in Macao. The result is Las Vegas Sands having 33.5% EBITDA share among the six gaming concession operators in Macao as of the end of 2023 on a trailing 12-month basis, up from 28% in 2012. Additionally, Las Vegas Sands' diversified gaming and nongaming offering is evident when one compares its Macao nongaming exposure (35% of total prepandemic Macao profit) with those of narrow-moat Wynn Resorts and no-moat MGM Resorts (both around midsingle digits of total Macao net revenue).

In Singapore, there were only two gaming licenses awarded in 2007 to Sands and Genting, and those two will maintain a duopoly through 2030. As with Macao, we think the government is unlikely to award any meaningful amount of new gaming licenses in the future, given their regulation to minimize the gambling done by its citizens. That said, management notes that new competition could even benefit existing operators, as only having two properties currently in the market may reduce the desire for repeat visits. Additionally, given the extremely strong occupancy (95% in the third quarter of 2024) of Las Vegas Sands' Singapore casino, Marina Bay Sands, the market should be able to support Sands' and Genting's additional room supply that we expect to start opening toward the end of this decade.

Las Vegas Sands sold its Las Vegas assets to Apollo and VICI for $6.25 billion in 2022. We view the Las Vegas region as not having a moat because of lower regulatory barriers, which increase competition, leading to lower returns on invested capital.

Government control prevents us from considering a wide economic moat. While an extremely unlikely scenario, the Chinese government could exercise its right to seize and take control of all gaming operations and facilities on the island, which would have a meaningful impact on the economic profit outlook of Las Vegas Sands.

Fair Value and Profit Drivers Dan Wasiolek, Senior Equity Analyst, 25 Oct 2024

After reviewing Las Vegas Sands' third-quarter results, we have increased our fair value estimate to $60 per share from $58, mostly to account for the time value of money. Our valuation implies a 10 times 2025 enterprise value/EBITDA multiple.

Covid had a pronounced impact on global travel demand, causing Las Vegas Sands' 2021 Macao and

Singapore revenue to amount to just 33% and 44% of 2019 levels, respectively. Covid-19 continued to meaningfully affect Sands' Macao revenue in 2022, with the figure reaching only 18% of 2019's level. China removed covid restrictions in early January 2023, driving Sands Macao revenue to 74% of prepandemic marks in that year. In 2024, we forecast industry gross gaming revenue to reach around the high 70s of 2019's level. Our Sands' Macao revenue growth forecast for 2024 is 9%, weighed by renovations in hotels, arenas, and casinos and weak economic growth in China. We expect Sands China sales to accelerate to 12%-13% growth in 2025, as renovation disruption dissipates, followed then by a high-single-digit percentage average annual growth rate through 2030. Given the growth we see from higher-margin mass gambling and nongaming activity, we project Sands' Macao EBITDA margins to expand to the high 30s in 2033 from the mid-30s in 2019.

For Marina Bay Sands in Singapore, our 2024 sales growth and EBITDA margin estimates are 10% and 49.5%, respectively. Including renovations and development of a fourth tower, we project Marina Bay Sands' sales to increase at a 8%-9% rate on average during the next 10 years.

We model capital expenditure of $2.2 billion and $8 billion for the renovation of existing assets and development of a fourth tower in Singapore, respectively. We see the fourth tower opening in 2031 and producing more than $1 billion in EBITDA in 2032.

Risk and Uncertainty Dan Wasiolek, Senior Equity Analyst, 25 Oct 2024

Our Morningstar Uncertainty Rating is High. Covid-19 materially affected global demand for travel and leisure, causing Sands' total revenue to drop 79% in 2020, followed by Macao industry gaming revenue at just 30% and 14% of 2019's level in 2021 and 2022, respectively, before lifting to the low-60s in 2023.

In the prepandemic year of 2019, the firm derived a single-digit percentage of its total Macao EBITDA from VIP players, a segment that is sensitive to economic, housing, and stock and credit market conditions, as well as government oversight. VIP rolling chip volume in Macao faced a double-digit decrease in the first half of 2009 amid the credit crisis and a steep decline in the Chinese stock market, and it showed weakness as a result of anticorruption activities in China during 2014-16 and then again in 2022-23 amid heightened regulatory hurdles. The central government controls the number of gaming tables, labor for development projects, visas for Chinese visits to Macao. A long-term risk is the potential for increased competition from new integrated resorts in other Asian countries.

Las Vegas Sands faces environmental, social, and governance risks like gambling addiction, which could stoke government restrictions and affect demand. Also, its resorts operate at all hours and days of the year, using energy and supplies, which if not properly managed could discourage some visitation. Additionally, it has customer data that it must be careful to protect.

Capital Allocation Dan Wasiolek, Senior Equity Analyst, 25 Oct 2024

We see Las Vegas Sands' balance sheet as solid and its investment strategy and execution as exceptional, resulting in an Exemplary Morningstar Capital Allocation Rating.

Forecast adjusted returns on invested capital (19% on average over the next five years) are set to handily outpace our 9% weighted cost of capital estimate over our entire outlook, and the balance sheet remains sound, given the company's medium revenue cyclicality and operating leverage. Further, we see plenty of financial flexibility, as Las Vegas Sands' net debt/EBITDA averaged around 1.5 times in the prepandemic 2017-19 years, and we see it at 2.5 times times in 2024, as global demand returns to the gaming industry over the next few years. Although $6.5 billion in debt is set to come due in 2024-27, we see it as manageable, given our expectation of about $12 billion in free cash flow to the firm during 2024-28.

We hold a positive view on Las Vegas Sands' investment strategy, which is prudently focused on building out its leading integrated resort positions in the high-economic-return regions of Macao and Singapore. Las Vegas Sands was founded in 1988 by former CEO and chair Sheldon Adelson, who died in early 2021. Adelson pioneered the fully integrated resort business model, featuring casino, hotel and resort, entertainment, and convention center operations with the opening of the Venetian in Las Vegas in the late 1990s. He was arguably the strongest operator in the industry. Before founding Sands, Adelson built the Comdex computer trade show, which was sold for more than $850 million, with Adelson's personal proceeds at more than $500 million. Adelson used the proceeds to purchase the Sands Hotel & Casino, which was subsequently replaced by the Venetian. While it is never easy to replace an icon like Adelson, we believe investors should have confidence in new CEO Rob Goldstein. Goldstein had been Las Vegas Sands' president and COO since early 2015, providing direction on existing and development properties. He has also maintained an active role on company earnings conference calls. He has been with the company since 1995 in various leadership roles, such as president and COO of the Venetian and Palazzo in Las Vegas during 1999-2010. We don't expect the company's focus on its investment-grade status, shareholder return of capital, or high-return development requirements to change. The company has invested $15 billion in Macao to date, including its current development of transforming its Cotai Central property into the Londoner. We think this $3 billion investment project will generate ROICs in the low double digits and help solidify its regulatory intangible advantage in the region. We are generally favorable on the company's sale of its Las Vegas assets for $6.25 billion in 2022, as it represents an attractive 13 times our 2023 EBITDA, and believe some of the proceeds will be reinvested in its higher-ROIC Macao properties. We are also favorable on the $1.75 billion and $8 billion renovation of existing assets and development of a fourth tower at its Singapore location, respectively, which we expect to generate economic returns in the teens and buoy its regulatory moat in the region.

Quantitatively, we believe our positive stance on its investment strategy is supported by robust ROIC (including goodwill) and improving operating margin performance.

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We see Las Vegas Sands' shareholder distribution as appropriate, as the company has a consistent record of paying dividends in nonpandemic years and has been opportunistic with share repurchases in the past, buying back its stock on pullbacks, when we find valuation at attractive levels.

Analyst Notes Archive

Las Vegas Sands Earnings: Looking Past Near-Term Headwinds Toward a Stout Intermediate-Term Position Dan Wasiolek, Senior Equity Analyst, 24 Oct 2024

In our view, investors should look past narrow-moat Las Vegas Sands' third-quarter results that were affected by transitory construction disruptions and lower hold. Instead, we think the focus should be on the prudent investments the company is making in its Macao and Singapore businesses, which will support revenue and profit growth starting next year, as well as buoy its regulatory edge (source of its narrow moat). We don't plan to change our $58 per share fair value estimate materially, leaving shares undervalued.

We aren't concerned with Sands' Macao third-quarter revenue decline of 1%, versus industry gross gaming revenue growth of 13%, or the 230-basis-point decline in the region's EBITDA margin to 33%, as results are currently affected by renovations at the company's two main properties—Londoner and Venetian. Specifically, revenue at these two resorts combined was down 7%, while sales grew 13% at other assets. Further, the two properties averaged margin declines of 335 basis points. As the calendar turns to 2025, disruptions end, leaving a renovated casino floor, rooms, and convention center, which we think can push Sands' Macao revenue up around 10%, ahead of the market's high-single-digit gaming revenue growth.

Outside of Macao, Sands is wisely investing in its Singapore business. Here, revenue dropped 9% and EBITDA margin contracted 420 basis points, due to lower hold, which can be volatile, and room, retail, and casino renovations (the property had around 1,600 rooms available versus 2,100 last year). While these disruptions will continue through the middle of next year, they will leave the company in a stronger position within the duopolistic market. Also, the company announced its plan to construct a fourth tower on the property, opening in 2031. We continue to expect the new building to produce a low-teens return and EBITDA of $1 billion within its first few years.

Las Vegas Sands Earnings: Macao Holds a Tough Hand in the Near Term, but Singapore Still Winning Dan Wasiolek, Senior Equity Analyst, 25 Jul 2024

Las Vegas Sands shares traded lower by 5% during July 24 after-market hours, on economic growth and revenue share loss concerns, which are affecting the company's Macao business. We plan to lower our $61 fair value estimate to $58 per share, as higher Singapore estimates are more than offset by a lower Macao forecast in 2024. Although we have trouble identifying a near-term catalyst for shares, we do view them as attractive, especially as Sands completes room, casino, and convention renovations in

2025, which we think will benefit sales growth and support the company's intangible asset edge, the source of its narrow moat.

Sands' Macao sales grew 8% (this was 82% of 2019's level versus 78% last quarter), below the 24% lift in industry gross gaming revenue, or GGR, (77% of 2019's level, up from 75% last quarter). Sands' GGR share has dropped to 24.4%, down from 26.5% a year ago, weighed by recent major room, casino, and convention renovations at its two main Macao resorts (Londoner and Venetian) that will continue into 2025. But we are encouraged that the average win per table at Londoner was up 48%, buoying our view that Sands' leading Macao position is structurally intact. That said, near-term renovation headwinds are compounded by uncertain economic growth, which could have driven the industry visitation to drop to 79% of 2019's level in the quarter versus 86% last quarter—although we think event and holiday timing played a part. Overall, we plan to reduce our 2024 Macao sales growth estimate to 13% from 21%.

The Singapore operations were strong, with sales up 10%, staying around 150% of 2019's level, as recent room and casino renovations are resonating with users. Also, EBITDA margin rose 370 basis points to 50.4%, aided by 240 basis points from a stronger hold rate. We plan to increase our 2024 revenue growth in the region to 13% from 10%, which assumes decelerating growth in the second half of the year to account for potentially slower economic growth.

Las Vegas Sands Earnings: Near-Term Renovation Disruption Supports Long-Term Competitive Advantage Dan Wasiolek, Senior Equity Analyst, 18 Apr 2024

Our main takeaway from narrow-moat Las Vegas Sands' first quarter is that near-term investments in its Macao properties are causing near-term sales share loss. In this vein, Sands' Macao revenue grew 42% from last year in the quarter, compared with industry gross gaming revenue growth of 65%. At the heart of Sands' $1.2 billion ongoing Macao portfolio investment this year was the decision to close its 15,000-seat Cotai arena in January, as it spent the next several months upgrading the facility. As a result, only 12 shows took place in the quarter versus 31 a year ago. Also, the firm is renovating its Sheraton hotel rooms, taking a few hundred keys off the market this year.

Still, our long-term view of Sands' position in the gaming enclave remains constructive. In fact, we think current expenditures stand to strengthen Sands' best-of-breed portfolio along the popular Cotai Strip. Thus, while we plan to adjust Sands' 2024 Macao sales growth to the low 20s from our high 20s (before earnings) to account for renovations, we expect to maintain a 7% average annual lift during 2025-30. Overall, we don't plan a material change to our $61 per share fair value estimate. We see shares as undervalued and applaud Sands' recent accelerated share repurchase activity around current levels—the firm bought back $450 million in the first quarter, near the $500 million for all of 2023. Our Morningstar Capital Allocation Rating remains Exemplary.

Although Sands' near-term Macao sales are hindered by renovations, EBITDA margins in the region remain healthy, aided by the continued shift to higher-margin mass play (which reached 110% of 2019's level in the quarter for the industry as a whole) from VIP wagering (39%). To this point, Sands' Macao EBITDA margins expanded 260 basis points to 33.7%, which harmonizes with the 150-basis-point expansion we model for 2024. Longer-term, we continue to see margins reaching the high 30s, driven by increasing mass play and nongaming activities.

Sands, Wynn, MGM: Thailand's Progress Toward Gaming Is Not a Risk to Macao's Opportunity Dan Wasiolek, Senior Equity Analyst, 18 Mar 2024

Thailand moved closer to legalized gambling this month with the completion of a gaming draft bill, setting the stage for a law as soon as this year, based on reports of strong government support. We don't believe the prospect of Thailand gaming resorts will have any material impact on demand for casinos in Macao, Singapore, or Japan for the foreseeable future. We are maintaining our fair value estimates of $61 for narrow-moat Las Vegas Sands, $122 for narrow-moat Wynn Resorts, and $55 for no-moat MGM Resorts. We rate all three as undervalued.

Thailand's gaming draft bill includes the potential for five to eight casinos over time, starting with just one urban licensed resort, which could be awarded as soon as next year to a local entity. While Thailand expects three fourths of sales from its resorts to come from residents, we see the competitive threat to casinos in Macao, Singapore, and Japan as nascent, given that Thailand represents around 0.1%, 2%, and 0.3%, respectively, of total visitation to those regions. Also, Macao is likely to maintain its advantage as the only place in the Eastern Hemisphere where there is an enclave of casinos and entertainment options, making it more of a world destination.

We remain constructive on the long-term opportunity for the Macao gaming industry, expecting mid- to high-single-digit sales growth on average annually over the next several years. Our stance is buoyed by favorable supply and demand characteristics. There are only six gaming licenses, which the Chinese government renewed in 2022 for another 10 years, through the end of 2032. As a result, we see a controlled and limited supply of competition for the Macao market over the next decade. On the demand side, there are 1.4 billion people who live in China and over 2 billion who live within a five-hour flight of Macao, but in 2019, only 27.9 million from mainland China and 39.4 million total visited Macao.

Las Vegas Sands Earnings: Industry-Leading Resorts Benefiting from Strength in Macao and Singapore Dan Wasiolek, Senior Equity Analyst, 25 Jan 2024

Las Vegas Sands' fourth-quarter sales lifted 161% with EBITDA margins expanding to 41.1% from 19.9%, driven by the recovery in Macao and lasting strength in Singapore. With results near our expectations, we don't plan a material change to our $60 fair value estimate and see shares as undervalued.

Sands' Macao region remains in recovery mode, despite economic growth concerns in China. To this

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point, industry visitation reached 90% of 2019's level in the quarter, up from 81% in the prior quarter. For the full year, Sands' Macao sales reached 74% of prepandemic marks, compared with our 75% forecast and comfortably above the industry's gross gaming revenue rate of 62%, as the company's well-positioned properties along the popular Cotai strip drove its leading 27% gaming sales share. Off the strength of improved revenue and mix to higher-margin mass play from VIP, Sands' Macao adjusted EBITDA margin reached 33.9% in 2023 versus the negative 20% margin in 2022 and near our 33.5% estimate. Looking to 2024, we expect Sands' Macao revenue to approach a full recovery, with adjusted EBITDA margins expanding to 35.5%. Long-term, we expect the company to maintain its leading share, buoyed by worthwhile investments in its existing properties amounting to $1.2 billion into 2025, or about 1% of total 2024 sales.

Singapore fourth-quarter sales rose 56%, with adjusted EBITDA margin lifting to 51.3% from 40% a year ago. Results were buttressed by mass gaming revenue that was 133% of 2019's level. Overall, the company's resort is producing at an all-time high adjusted EBITDA run-rate of $2 billion, and with ongoing renovations of the existing property equating to a $750 million investment into 2025, as well as a newly built fourth tower opening by the end of the decade (expenditure amount not yet determined), we think $3 billion in adjusted EBITDA annually and margins in the low-50s are within reach over the next several years.

Las Vegas Sands Earnings: Macao and Singapore Results Continue to Shine Amid Macro Uncertainty

Dan Wasiolek, Senior Equity Analyst, 18 Oct 2023

Las Vegas Sands shares popped 5% as the firm's Macao and Singapore assets continued to see a demand and profitability recovery in the third quarter. We plan to lift our $59 valuation around $1-$2 for time value and slightly higher-than-expected near-term Macao profits, leaving shares undervalued.

Despite macro pressures in China, Sands Macao third-quarter sales improved to 85% of 2019's level from 76% in the second quarter and 54% in the first quarter. We plan to maintain our full-year Sands Macao 2023 forecast at 75% of prepandemic marks, with a nearly full recovery in 2024. Revenue was aided by visitation returning to 81% of 2019's level, up from 63% a quarter ago. Barring a severe economic contraction, we think travel can improve further, as Macao/Hong Kong airlift is still only around two thirds of 2019's level. EBITDA margins in the region are also expanding across the company's five properties, resulting in a consolidated figure of 35.3% in the quarter (84% of 2019's level) versus the 33% reported last quarter (71%). Here, the company is benefiting from a streamlined cost structure and favorable industrywide mix shift to mass gaming from VIP. We plan to lift our 2023 forecast to around 33.5% from 32.7%.

We remain constructive on Macao's long-term prospects, with 1.4 billion people in mainland China serviced by just six market licenses. We are encouraged that management continues to invest in its

Macao portfolio, with room and gaming renovations set to occur at its Sheraton tower within its newly branded Londoner resort through 2025. In our view, this stands to support its regulatory intangible advantage, the source of its narrow moat.

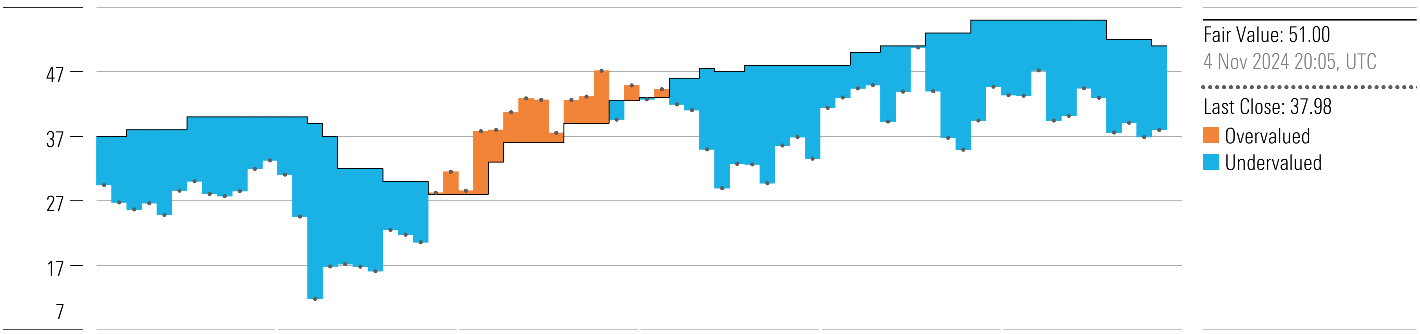
Singapore results were also strong, with third-quarter sales at 128% of prepandemic figures, which compares with 134% in the second quarter and 111% in the first quarter. Impressively, this strength is despite prudent room and casino floor renovations and flight capacity from China (just 77% of 2019's level).

Morningstar Equity Analyst Report | Report as of 15 Nov 2024 00:05, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC.

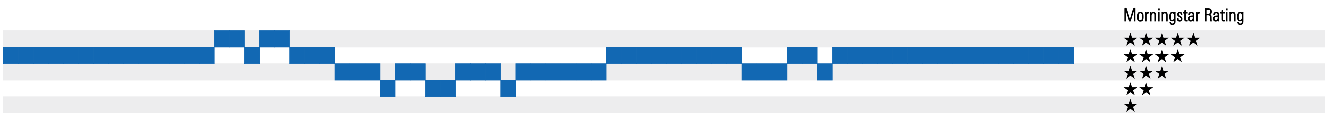
Las Vegas Sands Corp LVS ★★★★ 14 Nov 2024 22:36, UTC

Competitors Price vs. Fair Value

MGM Resorts International MGM

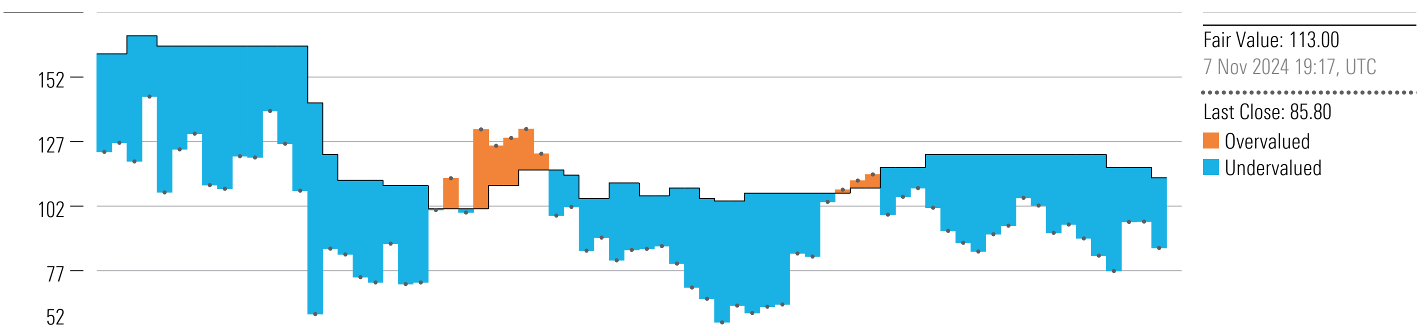


	2019	2020	2021	2022	2023	YTD	
	0.83	1.13	1.06	0.70	0.81	0.74	Price/Fair Value
	39.28	-4.82	42.46	-25.27	33.25	-15.00	Total Return %

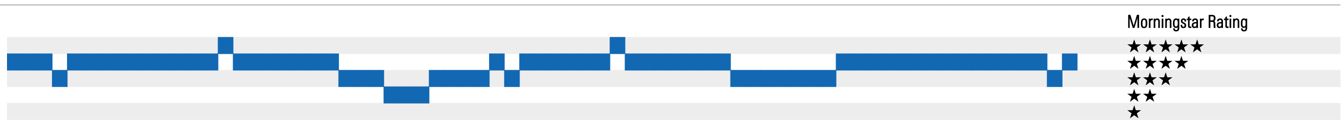


Total Return % as of 13 Nov 2024. Last Close as of 13 Nov 2024. Fair Value as of 4 Nov 2024 20:05, UTC.

Wynn Resorts Ltd WYNN



	2019	2020	2021	2022	2023	YTD	
	0.85	1.12	0.77	0.77	0.75	0.83	Price/Fair Value
	44.19	-18.03	-24.63	-3.02	11.39	-5.00	Total Return %



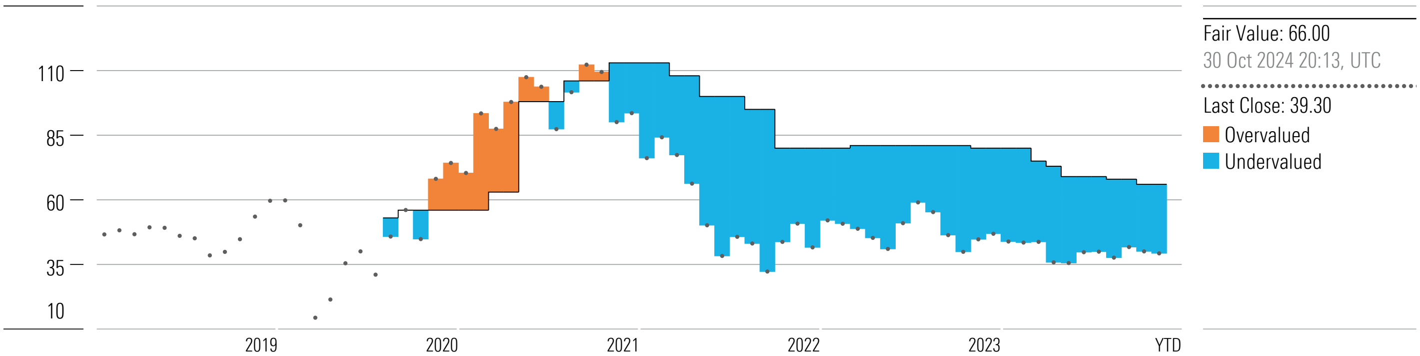
Total Return % as of 13 Nov 2024. Last Close as of 13 Nov 2024. Fair Value as of 7 Nov 2024 19:17, UTC.

Morningstar Equity Analyst Report | Report as of 15 Nov 2024 00:05, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 13 of 22

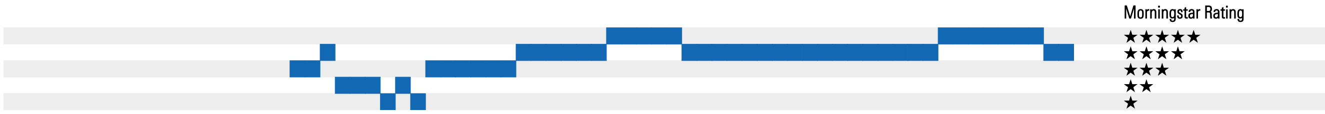
Las Vegas Sands Corp LVS ★★★★ 14 Nov 2024 22:36, UTC

Competitors Price vs. Fair Value

Caesars Entertainment Inc CZR



	2019	2020	2021	2022	2023	YTD	
	—	1.33	0.83	0.52	0.59	0.59	Price/Fair Value
	64.71	24.53	25.93	-55.52	12.69	-16.17	Total Return %



Total Return % as of 13 Nov 2024. Last Close as of 13 Nov 2024. Fair Value as of 30 Oct 2024 20:13, UTC.

Morningstar Equity Analyst Report | Report as of 15 Nov 2024 00:05, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 14 of 22

Las Vegas Sands Corp LVS ★★★★ 14 Nov 2024 22:36, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
49.53 USD 13 Nov 2024	60.00 USD 25 Oct 2024 20:00, UTC	0.83	35.74 USD Bil 14 Nov 2024	Narrow	Mid Growth	High	Exemplary	6 Nov 2024 06:00, UTC

Morningstar Historical Summary

Financials as of 30 Sep 2024

Fiscal Year, ends 31 Dec	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	TTM
Revenue (USD Bil)	14.58	11.69	11.27	12.73	13.73	12.13	2.94	4.23	4.11	10.37	8.40	11.32
Revenue Growth %	5.9	-19.9	-3.6	12.9	7.9	-11.7	-75.8	44.0	-2.9	152	12.7	32.0
EBITDA (USD Mil)	5,179	3,925	3,687	4,589	4,918	5,120	-301	244	406	3,859	3,051	4,181
EBITDA Margin %	35.5	33.6	32.7	36.1	35.8	42.2	-10.2	5.8	9.9	37.2	36.3	36.9
Operating Income (USD Mil)	4,132	2,924	2,711	3,492	3,907	3,480	-1,301	-643	-770	2,355	1,863	2,580
Operating Margin %	28.3	25.0	24.1	27.4	28.5	28.7	-44.3	-15.2	-18.7	22.7	22.2	22.8
Net Income (USD Mil)	2,841	1,966	1,679	2,808	2,413	2,698	-1,685	-961	1,832	1,221	1,122	1,504
Net Margin %	19.5	16.8	14.9	22.1	17.6	22.3	-57.3	-22.7	44.6	11.8	13.4	13.3
Diluted Shares Outstanding (Mil)	808	798	795	792	786	771	764	764	764	765	742	746
Diluted Earnings Per Share (USD)	3.52	2.47	2.11	3.55	3.07	3.50	-2.21	-1.26	2.40	1.60	1.51	2.02
Dividends Per Share (USD)	2.00	2.60	2.88	2.92	3.00	3.08	0.79	0.00	0.00	0.40	0.60	0.80

Valuation as of 31 Oct 2024

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Recent Qtr	TTM
Price/Sales	3.2	2.9	3.8	4.4	3.0	3.9	7.6	5.9	9.2	4.4	3.3	3.4
Price/Earnings	17.5	15.8	26.0	26.2	10.8	27.9	-60.2	-20.7	-32.3	56.5	23.6	25.6
Price/Cash Flow	9.7	9.6	11.1	12.4	8.7	17.2	-625.0	-158.7	-75.2	17.8	11.3	11.7
Dividend Yield %	3.44	5.93	5.39	4.2	5.76	4.46	2.62	—	—	0.81	1.59	1.54
Price/Book	6.4	5.1	6.7	9.3	5.9	9.8	14.2	13.7	9.4	8.1	9.7	11.0
EV/EBITDA	10.3	10.7	13.7	13.6	9.7	11.9	-189.6	170.7	113.8	11.9	0.0	0.0

Operating Performance / Profitability as of 30 Sep 2024

Fiscal Year, ends 31 Dec	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	TTM
ROA %	12.6	9.1	8.1	13.7	11.2	11.8	-7.7	-4.7	8.7	5.6	—	6.9
ROE %	38.2	28.0	25.8	44.4	39.7	49.6	-41.3	-38.7	62.3	30.5	—	37.7
ROIC %	17.8	13.2	12.0	18.8	16.3	17.1	-7.6	-2.1	12.8	8.7	—	10.5
Asset Turnover	0.6	0.5	0.5	0.6	0.6	0.5	0.1	0.2	0.2	0.5	—	0.5

Financial Leverage

Fiscal Year, ends 31 Dec	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Recent Qtr	TTM
Debt/Capital %	57.8	57.6	60.4	59.0	67.6	70.5	82.4	88.1	78.2	74.7	76.7	—
Equity/Assets %	32.3	32.7	30.2	31.4	25.2	22.4	14.3	10.0	17.6	18.9	16.0	—
Total Debt/EBITDA	1.9	2.4	2.6	2.1	2.4	2.4	-46.5	60.6	39.4	3.6	4.6	—
EBITDA/Interest Expense	18.9	14.8	13.5	14.0	11.0	11.4	-0.6	0.4	0.6	4.7	5.6	5.7

Morningstar Analyst Historical/Forecast Summary as of 25 Oct 2024

Financials

			Estimates		
Fiscal Year, ends 31 Dec 2023	2022	2023	2024	2025	2026
Revenue (USD Mil)	4,110	10,372	11,368	12,471	13,379
Revenue Growth %	-2.9	152.4	9.6	9.7	7.3
EBITDA (USD Mil)	732	4,085	4,461	5,021	5,559
EBITDA Margin %	17.8	39.4	39.2	40.3	41.6
Operating Income (USD Mil)	-792	2,313	2,682	3,293	3,952
Operating Margin %	-19.3	22.3	23.6	26.4	29.5
Net Income (USD Mil)	-918	1,423	1,936	2,213	2,500
Net Margin %	-22.3	13.7	17.0	17.7	18.7
Diluted Shares Outstanding (Mil)	764	765	747	722	700
Diluted Earnings Per Share(USD)	-1.20	1.86	2.59	3.06	3.57
Dividends Per Share(USD)	0.00	0.80	0.80	1.07	1.25

Forward Valuation

			Estimates		
	2022	2023	2024	2025	2026
Price/Sales	8.9	3.6	3.1	2.8	2.6
Price/Earnings	-40.1	26.5	18.7	15.9	13.6
Price/Cash Flow	—	—	—	—	—
Dividend Yield %	—	1.6	1.7	2.2	2.6
Price/Book	9.5	9.1	9.9	10.2	9.6
EV/EBITDA	63.1	11.2	10.1	9.0	8.1

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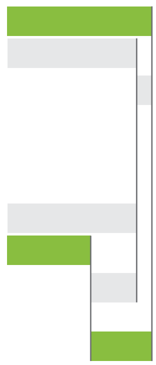
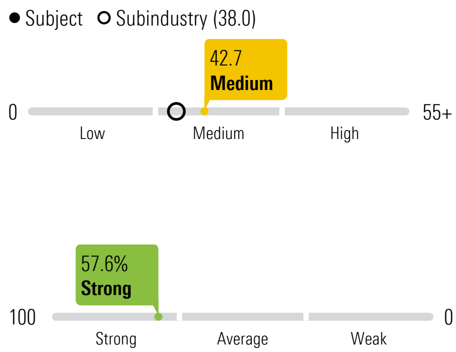
Las Vegas Sands Corp LVS ★★★★ 14 Nov 2024 22:36, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
49.53 USD 13 Nov 2024	60.00 USD 25 Oct 2024 20:00, UTC	0.83	35.74 USD Bil 14 Nov 2024	Narrow	Mid Growth	High	Exemplary	6 Nov 2024 06:00, UTC

ESG Risk Rating Breakdown

Exposure	
Company Exposure[1]	42.7
– Manageable Risk	38.2
Unmanageable Risk[2]	**4.5**
Management	
Manageable Risk	38.2
– Managed Risk[3]	22.0
Management Gap[4]	**16.2**
Overall Unmanaged Risk	**20.7**

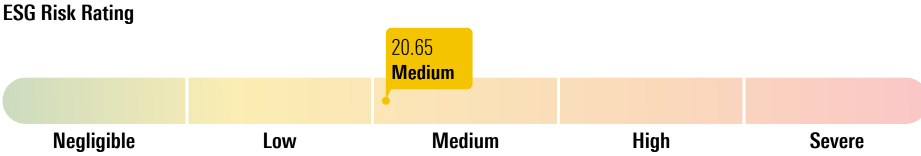




- Exposure represents a company's vulnerability to ESG risks driven by their business model
- Exposure is assessed at the Subindustry level and then specified at the company level
- Scoring ranges from 0-55+ with categories of low, medium, and high-risk exposure

- 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 57.6% 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 Nov 06, 2024. Highest Controversy Level is as of Nov 08, 2024. Sustainalytics Subindustry: Casinos and Gaming. 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 06 Nov 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
Las Vegas Sands Corp	42.7 | Medium (0 – 55+)	57.6 | Strong (100 – 0)	20.7 | Medium (0 – 40+)
MGM Resorts International	40.3 | Medium (0 – 55+)	44.7 | Average (100 – 0)	24.2 | Medium (0 – 40+)
Monarch Casino & Resort Inc	36.1 | Medium (0 – 55+)	18.8 | Weak (100 – 0)	30.0 | Medium (0 – 40+)
Wynn Resorts Ltd	41.5 | Medium (0 – 55+)	44.5 | Average (100 – 0)	25.0 | Medium (0 – 40+)
Caesars Entertainment Inc	41.5 | Medium (0 – 55+)	57.4 | Strong (100 – 0)	20.2 | Medium (0 – 40+)

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Appendix
Historical Morningstar Rating

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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
★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★	★★★	★★★	★★★★

MGM Resorts International MGM 14 Nov 2024 22:34, 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
★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★

Wynn Resorts Ltd WYNN 14 Nov 2024 22:34, 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
★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★	★★★★	★★★★	★★★★

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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.

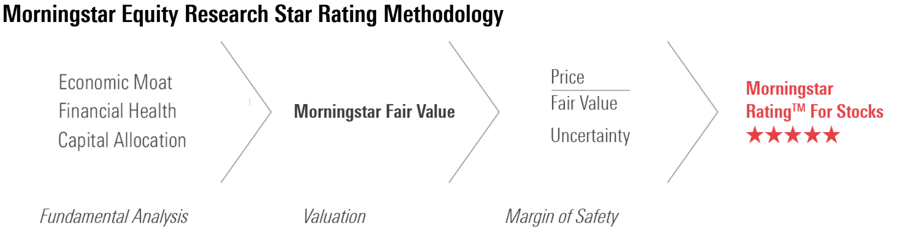
Because a dollar earned today is worth more than a dollar earned tomorrow, we discount our projections of cash flows in stages I, II, and III to arrive at a total present value of expected future cash flows. Because we are modeling free cash flow to the firm—representing cash available to provide a return 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



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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.

	Margin of Safety	
Qualitative Analysis Uncertainty Ratings	★★★★★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.

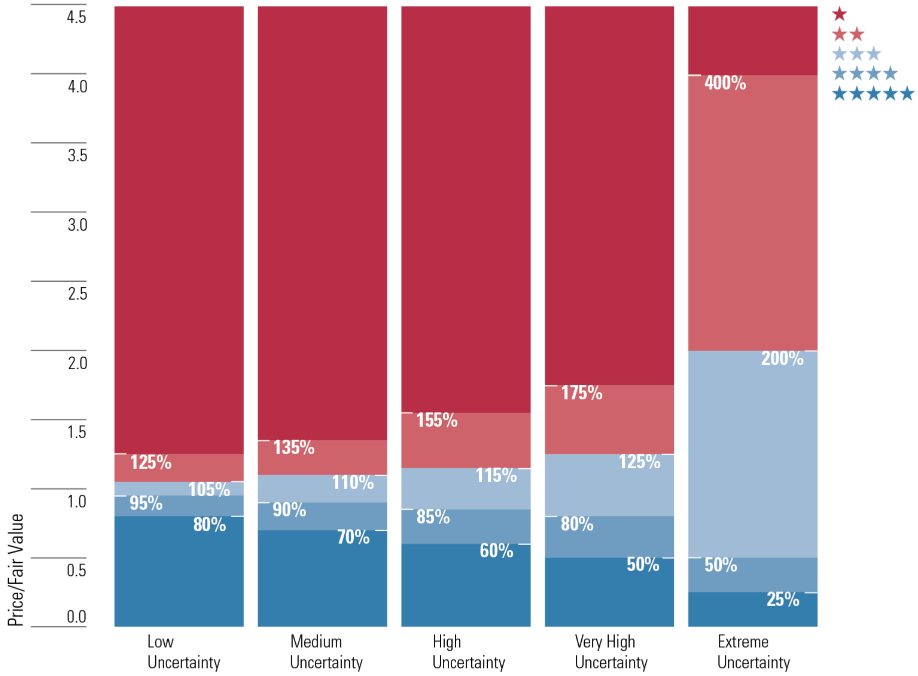
4. Market Price

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 Star Rating for Stocks

Morningstar Equity Research Star Rating Methodology



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-

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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.

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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.

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