McDonald's Corp MCD ★★ 1 Feb 2023 17:14, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Moat Trend™	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
265.50 USD 31 Jan 2023	240.00 USD 1 Feb 2023 17:10, UTC	1.11	195.85 USD Bil 31 Jan 2023	Wide	Stable	Low	Standard	1 Feb 2023 06:00, UTC

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

Reporting Currency: USD | Trading Currency: USD
Currency amounts expressed with "$" are in U.S. dollars (USD) unless otherwise denoted.

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

McDonald's Margin Compression Sinks Shares After Q4 Results, but Long-Term Narrative Intact

Analyst Note Sean Dunlop, Equity Analyst, 31 Jan 2023

Wide-moat McDonald's long-term road map is intact, but fourth-quarter results and 2023 guidance suggest a protracted recovery to prepandemic profitability. Diluted earnings per share of $2.59 aligned closely with our $2.60 forecast as strong guest traffic offset softer-than-expected margins. The 14.6% U.S. restaurant margin and 17.4% international operated markets margin were 40 and 160 basis points shy of our forecasts, with management's guidance for midteens European inflation in 2023 adding a degree of near-term earnings risk that we'd underestimated. We now project slightly softer earnings growth in 2023, with a full recovery to prepandemic restaurant margins likely stretching out five or six years (2027) as the firm prices at or below inflation to defend guest traffic gains. We expect to lower our $247 fair value estimate by a low-single-digit percentage, roughly consistent with the market's reaction to earnings.

We continue to view McDonald's as well positioned to navigate current headwinds, with its value-driven menu helping drive 5% comparable guest count growth globally. With increasing evidence of check management, we'd expect McDonalds to lean into its scale-driven cost advantage to provide compelling value for its customers, benefiting from the trade-down effect and capturing market share from smaller, less profitable competitors. The firm's growing loyalty program, now reaching 50 million guests in its top operated markets, should also prop up traffic as consumers rationalize restaurant spending in favor of their favorite brands.

McDonald's unit growth aspirations strike us as cogent, with 1,500 net openings planned for 2023. A growing system is a big draw for aspiring franchisees, but we believe that the firm will need to invest heavily in

Financial Summary and Key Statistics

	Actual		Forecast	
	2021	2022	2023	2024
Revenue (USD Mil)	23,223	23,182	24,513	26,357
Revenue Growth %	20.9	-0.2	5.7	7.5
Operating Income (Mil)	10,356	9,371	10,913	11,850
Operating Margin %	44.6	40.4	44.5	45.0
Adjusted EBITDA (Mil)	12,097	10,922	12,800	13,801
Adjusted EBITDA Margin %	52.1	47.1	52.2	52.4
Earnings Per Share (Diluted) (USD)	10.04	8.33	10.30	11.00
Adjusted Earnings Per Share (Diluted) (USD)	9.30	10.10	10.30	11.00
Adjusted EPS Growth %	53.7	8.6	2.0	6.8
Price/Earnings	28.8	26.1	26.0	24.3
Price/Book	-43.8	-32.5	-20.5	-24.5
EV/EBITDA	17.2	22.4	18.9	17.5
Free Cash Flow Yield %	4.4	2.8	3.6	4.0

Source: Morningstar Valuation Model. Data as of 13 Jan 2023.

Morningstar Equity Company Report | Report as of 1 Feb 2023 17:23, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC.

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Sector Consumer Cyclical

Industry Restaurants

Business Description

McDonald's is the largest restaurant owner-operator in the world, with 2021 system sales of $112 billion across nearly 40,000 stores and more than 100 markets. McDonald's pioneered the franchise model, building its impressive footprint through partnerships with independent restaurant franchisees around the world. The firm earns more than 60% of its revenue from franchise royalty fees and lease payments, with the remainder coming from company-operated stores across its three core segments: the United States, internationally operated markets, and international developmental/licensed markets. McDonald's owned 55% of the real estate and 80% of the buildings in its franchise system as of the end of 2021, offering it substantial leverage in maintaining quality standards and consistency.

automation and franchisee support to defend unit-level cash returns on investment amid higher input and construction costs.

McDonald's attention to consumer value perception has been rewarded by gains in quick-service traffic share—a laudable achievement, in our view, given that the franchise system remains free to choose its own menu price points, with corporate control limited to consulting and recommendations. One lever that McDonald's has effectively deployed is franchisee support, with management penciling in $100 million-$150 million in planned support for struggling franchisees in 2023 (predominantly in Europe), permitting them to maintain competitive pricing despite flagging operating margins. We believe that while dilutive in the near term, the actions will have a value-accretive effect on the system in the long term, with consumer value perception and behavior proving extremely sticky in the industry.

We appreciate the efforts that McDonald's has made to innovate around its "MCD" framework, with 35% of sales coming through digital channels during the quarter. As the firm's base of known customers increases, and as promotional dollars flow toward app and loyalty incentives in lieu of indiscriminate national offers, we expect better guest frequency, higher returns on ad spending, and durable same-store sales growth to follow in the medium term as the MyMcDonald's program achieves scale.

Business Strategy & Outlook Sean Dunlop, Equity Analyst, 1 Feb 2023

As the leader in global food-service sales, McDonald's is taking adequate steps to adjust to an evolving competitive landscape, in our view, leveraging its scale to invest heavily in digital acuity and menu innovation en route to compelling unit economics.

While we expect a turbulent couple of quarters amid a soft macroeconomic environment, we're encouraged by management's vision for the business, which we believe should enable McDonald's to maintain its edge. The firm has widely embraced customer centricity and technological prowess since its 2015 turnaround, and while the processes have evolved since then, the firm's focus on the customer experience has not. The chain's attention to digitization is laudable, with 35% of its systemwide sales now coming through digital channels, partially attributable to a loyalty member base that now measures 50 million across its top six markets.

We believe that management's "Accelerating the Arches 2.0" framework capitalizes well on the firm's cost advantages in marketing and technology investments. The plan focuses on a unified marketing approach, a commitment to the core menu, and an emphasis on the four D's: delivery, digital, drive-thru, and development. We believe that the pivot is warranted, with consumer adoption of digital channels remaining quite sticky, and see long-term upside through labor efficiency, improved order accuracy, and suggestive selling, all of which have grown increasingly important as input cost inflation has driven restaurant margins (and cash-on-cash returns) sharply lower.

With the notoriously slow-moving restaurant industry forced to make widespread investments in technology since the onset of COVID-19, we expect omnichannel ordering capabilities to become a required offering from larger players. McDonald's mobile application, loyalty program, and recent efforts toward order automation and suggestive selling represent steps in the right direction, a view substantiated by the firm's recent market share gains, impressive same-store sales growth, and robust unit development pipeline.

Bulls Say Sean Dunlop, Equity Analyst, 1 Feb 2023

- With an expansive drive-thru footprint and base of newly remodeled stores, McDonald's is well positioned to take advantage of evolving digital ordering habits.
- Technological investments and the ongoing rollout of the firm's loyalty program leverage McDonald's scale and could positively drive average check and brand affinity.
- As the low-cost operator in the space, input cost inflation and consumer pressure offer McDonald's a chance to gain share in key markets.

Bears Say Sean Dunlop, Equity Analyst, 1 Feb 2023

- Wage inflation, particularly in the U.S., could result in an increase in price competition, additional investments in automation, and a shift toward relatively cheaper substitutes in the food-at-home category.
- While improving, low satisfaction scores relative to industry benchmarks could impair the brand if left unresolved, threatening McDonald's pricing power if the firm is unable to meet changing customer demands.
- Sensitivities to sometimes irrational pricing pressure and limited-time offers can pressure results, as seen during the chicken sandwich wars.

Fair Value and Profit Drivers Sean Dunlop, Equity Analyst, 1 Feb 2023

We're lowering our fair value estimate to $240 per share from $247 after digesting fourth-quarter results. While comparable store sales strength and growth in global traffic were encouraging, cost pressures remained front and center, with flat-to-down projected company-owned restaurant margins leading us to modestly lower our 2023 earnings projections. We expect a full recovery to prepandemic unit-level profitability, but an inability to push through price increases during a period of consumer pressure suggests a long road to recovery. We don't expect the firm to achieve prepandemic restaurant-level margins until 2027, but do expect the recession-resistant company to generate nominal sales growth through 2023 and 2024 despite economic turbulence. Our revised fair value estimate suggests a 2023 price/earnings of 23 times and an enterprise value/2023 EBITDA of 16.5 times.

We've been impressed by the firm's ability to drive robust comparable store sales growth as it navigated a global pandemic, digital transformation, and the divestiture of its largely company-owned Russian market. With 20% same-store sales growth relative to 2019 (a bit north of 6% annualized), we believe that McDonald's has taken meaningful market share, and we continue to expect near-term outperformance as the firm's value-oriented fare is uniquely well positioned to cater to a strapped consumer. That said, while the firm has been able to pass along a meaningful portion of cost increases (raising prices roughly 10% in the U.S. from a year ago), it hasn't been able to fully defray pressure without outrunning its core customer, given that input costs and hourly labor have swelled by more than 20% relative to February 2020, and we don't expect normalized margins until 2027, given macroeconomic pressure.

We believe that McDonald's has had the luxury of investing through the cycle, while smaller, less capitalized peers curtailed investments and struggled to defray rising input costs, affording an opportunity to take market share in the near to medium term, particularly in markets where independent restaurants maintain higher share. Driven by the firm's young loyalty program, surging digital sales volumes, and unit development, we expect the burger giant to continue to capture wallet share abroad, with our forecasts calling for average annual sales growth of 5.5% and 9.2% through 2027 in the internationally operated markets and internationally developed and licensed segments, respectively.

Our operating margin assumptions are largely driven by operating leverage and a favorable mix shift, with McDonald's selling, general, and administrative expenditures falling to roughly 12% of sales in 2032 from a high-water mark of 13.3% in 2020, with depreciation normalizing after extensive investments in restaurant remodeling.

Economic Moat Sean Dunlop, Equity Analyst, 1 Feb 2023

Low barriers to entry and minimal switching costs render the restaurant industry very competitive, making it difficult for most operators to develop an economic moat. Those who are able to do so, as we see it, focus on generating pricing power through a substantially differentiated and recognizable brand or by developing structurally lower operating costs, generally supported by scale-driven pricing advantages and leveraged systemwide investments in marketing and technology, while spreading administrative expenses over a larger revenue base.

In our view, McDonald’s boasts a wide economic moat, with pricing power, a healthy network of franchisees, and successful international replication underpinning its brand intangible asset. We also believe that McDonald’s benefits from a durable cost advantage, with its dominant global scale allowing it to procure food and paper at favorable prices, to leverage marketing and technology investments across its global footprint, and to secure lower rates from third-party delivery aggregators. Our wide moat rating implies the assumption that the firm can continue to earn positive economic returns for the next 20 years. To this point, the firm has earned an average return on invested capital (inclusive of goodwill) of 18% over the last five years, against a weighted average cost of capital (as we calculate it) of 7.0%. Our 10-year forecast sees an average adjusted ROIC of 26%,

with our 2032 projection of 29% outstripping the firm’s prepandemic average due to positive operating leverage and refranchising. The strength of recent technological investments, the company’s strong performance during a trying 2020—during which its ROIC of nearly 14% still outperformed its cost of capital—and ongoing success in international markets leave us confident that McDonald’s will continue to earn excess returns over an extended horizon.

With respect to intangible assets, we cite the firm’s ability to pass through food and labor cost inflation to customers, its impressive restaurant-level margins and unit volume, and number-one quick-service restaurant market share by sales volume in every major market in which it operates (with the notable exception of China) as the pillars underpinning our wide moat rating. To the first point, McDonald’s U.S. and international developmental/licensed segments saw their average check increase roughly 5% per year during 2016-19, faster than food inflation (1.3%) and increases in food-away-from-home pricing (up 2.7%, per USDA data) during that period. While the firm suspended its reporting of that figure due to temporary store closures during the initial surge of COVID-19, we view more than 6% annualized same-store sales growth and market share gains between 2019 and 2022 as reflective of a competitively advantaged brand, despite margin compression amid an unprecedented surge in input costs, and expect a full (if protracted) recovery to prepandemic profitability.

Turning to restaurant-level economics, we believe that the attractiveness of a brand to franchisees is driven by average unit volume, restaurant-level margins, systemwide stability, and franchise return on investment. McDonald’s scores well across the board, with average sales per U.S. franchised restaurant of $3.6 million in 2022, meaningfully outperforming publicly traded peers in the hamburger space (Burger King saw $1.4 million, Wendy’s saw $1.9 million, and Sonic saw $1.6 million, per Restaurant Business' 2022 top 500 report and our calculations). Given that restaurants feature high incremental operating margins, we estimate that higher sales lead to meaningfully better store-level operating income than many of McDonald’s direct competitors, a view corroborated by franchise disclosure documents after adjusting for measurement comparability. We conservatively estimate that McDonald’s franchisees earn midteens cash on cash returns (annual operating income as a proportion of total cash outlay), with category peers earning midsingle digits to midteens, underpinning the firm's unit development aspirations and increasing its allure in the eyes of franchisees.

Finally, with its systemwide sales of $116 billion in 2022, we estimate that McDonald’s attracted roughly 4% of global consumer food-service sales, nearly doubling closest competitor Yum Brands’ share and illustrating the firm’s success in international concept replication. With a footprint spanning 118 countries and a 55-year international operating history, McDonald’s has demonstrated brand strength across geographies, tastes, and cultures. While hiccups along the way have led to philosophical changes in approach, we’re impressed by McDonald’s ability to transfer winning innovations across the system, as seen with the introduction of Spicy Chicken McNuggets, which were initially developed in the Chinese market. The pace of innovation should only accelerate moving forward as the firm has migrated its international franchisees onto a more homogeneous technology stack, and we view investments in digital innovation, loyalty, new format stores, and the firm's chicken platform as evidence that management is taking appropriate strategic steps to position the firm for the ongoing evolution of the restaurant industry.

Turning to the firm’s cost advantage, we believe that McDonald’s commanding scale allows it to benefit from volume discounts in food and paper procurement from food distributors, fixed-cost leverage over general, administrative, marketing and technological expenditures, and from lower rates on third-party aggregator platforms. With respect to procurement relationships, QSR operators primarily value cost and on-time delivery. Larger case volume per store helps food distributors manage delivery costs per case, particularly with expensive last-mile delivery, while in-house technological capabilities offer chains the advantage of paying for food products without added services such as inventory management, marketing strategies, or other consulting offerings. Larger sales volume and geographic reach allow the biggest national restaurant operators to benefit from purchasing leverage, with food distributors willing to accept lower margins in exchange for higher operating income (margin dollars).

While marketing and technology spending are easy to overlook, the benefits of scale are important when building an international brand. With a 4% marketing royalty and $116 billion of 2021 systemwide sales, McDonald's advertising cooperatives likely maintain a nearly $4.5 billion marketing kitty to coordinate promotions, like the firm's popular Travis Scott and J Balvin "famous" meals, Cactus Cactus Plant Flea Market toys, limited time offers, or top-of-funnel brand marketing through conventional print, radio, and digital advertising (though we note that international master franchisees get to set their own marketing rates, so our calculated figure is just an estimate). More concretely, national and international brand awareness help new units achieve normalized average unit sales more quickly, improving cash payback periods and, by extension, lenders' and franchisees' appetites to partner with the burger chain.

On the technology side, the firm has quickly repositioned from technology laggard to leader, piloting AI-enabled drive-thru ordering, signing a series of delivery partnerships with third-party aggregators, and rolling out a global loyalty program, illustrating its renewed digital focus. While McDonald's has not indicated an appetite for further acquisitions (like Dynamic Yield and Apprente, both of which have since been divested, for all intents and purposes), we expect internal investments in mobile ordering, curbside delivery, takeaway windows, and multiple drive-thru lanes in select locations to help the firm increase throughput during key dayparts, and appreciate the longer-term potential of technology on labor efficiency, order accuracy, and guest engagement. The meaningful improvement in drive-thru times despite a surge in off-premises volume and labor pressure over the past few years shows one of the potential benefits of a digital pivot—requiring fewer hours of labor per dollar of sales—which figures to become increasingly important as the industry remains understaffed and as leisure and hospitality wages continue to grow. In our opinion, effective utilization of technology has become table stakes in the restaurant industry as firms begin to cultivate a detailed understanding of customers' behaviors, leverage machine learning and artificial intelligence to increase customer lifetime value, and provide targeted promotions, but underlying data from customers who order through loyalty programs and white-label online channels offers a potentially enduring competitive edge. As a result, the firm's digital focus, trying to increase its pool of "known" customers (from 5% at the end of the third quarter of 2021 to a targeted level around 40%) strikes us as strategically sound, with data increasingly considered tantamount to a factor of production.

An underappreciated manifestation of the firm's cost edge is reflected in McDonald's ability and willingness to shore up the health of its franchise system, beyond pure unit economics, in our view. With the firm's commitment to selectively and temporarily shore up franchisee profitability in Europe (to the tune of $100 million-$150 million in 2023) amid an ongoing surge in food cost inflation, we see traces of a competitive advantage that only the largest global restaurant operating companies could replicate, with support serving to avoid costly unit closures and as a proof point that the firm is committed to defending the profitability of its franchisees. It also allows franchisees to invest in long-term customer relationships, underpricing inflation and growing share of industry traffic as consumers increasingly seek value for their money. Rent holidays in 2020 amid the outbreak of COVID-19 served a similar end and helped catalyze the impressive string of subsequent results that have solidified the firm's commanding position in the global restaurant hegemony.

Finally, though restaurants and third-quarter operators are notoriously opaque regarding contract structures, we believe that McDonald's pays lower commissions (low double digits) to aggregators like DoorDash and Uber Eats than do smaller peers, and far lower than the 30% headline rate. As a relatively early entrant in the space, partnering with Uber Eats in 2017, McDonald's likely grandfathered in a lower commission, while a subsequent deal with DoorDash in 2019 occurred as pricing competition reached its zenith. Both were renegotiated as global deals in 2021. Management commentary from delivery firms supports this view, with QSR firms widely viewed as loss leaders—necessary to attract new consumers, but materially less profitable than independent restaurants and smaller brands, which rely on the aggregators for demand generation.

Moat Trend Sean Dunlop, Equity Analyst, 1 Feb 2023

We assess McDonald's moat trend as stable, with the success of the firm's 2015 turnaround plan becoming evident with recovering market share, increasing transaction volume, and more durable pricing power. While certain industry headwinds persist, including slowing domestic growth in the QSR burger category, changing consumer tastes, and hefty competition, we believe that the firm's competitive position is unlikely to change materially in the near to medium term after evaluating impending opportunities and threats. We model McDonald's goodwill-adjusted ROICs steadily increasing from roughly 19% in 2022 to north of 25% in 2026 as the firm benefits from refranchising in the internationally operated markets segment and gradually recovers toward prepandemic restaurant-level margins.

We believe that the firm has skillfully repaired its brand image following declining sales and market share in 2012-15, with a focus on menu innovation, taste, and improved nutritional profiles of happy meals helping the firm overcome food quality concerns that saw the firm's market share in the U.S. fall from 16.6% of the limited-service market in 2012 to 14.5% in 2016. The firm's brand intangible asset has stabilized, with the introduction of real ground beef, menu innovation in the chicken space, and concept testing meat substitute products pointing to an increased attention to changing consumer demands. With respect to cost advantage, the firm's more than 40,000-unit footprint and $116 billion in 2022 systemwide sales render it unlikely that scale-driven benefits to food-sourcing costs and preferential rates on delivery platforms will dissipate in the near to medium term.

Far from undermining the existing restaurant hegemony, we view a technology-led evolution as reinforcing the largest operators' cost-advantage moats. More concretely, we expect that the largest operators and operating companies will be able to rationalize redundant back-office costs—legal, finance, and human resources—and require a commensurately lower sales bump or percentage cost-savings from technology investments to generate a positive ROI. This view is reflected in the data, with chain restaurants continuing to gain market share over the past five years, and with many restaurant-operating companies—narrow-moat RBI, wide-moat Yum Brands, privately held Inspire Brands, and narrow-moat Darden—seeking roll-up acquisitions with the intent of generating scale and reducing administrative costs as a percentage of systemwide sales.

Nonetheless, we're reluctant to assign a positive trend rating to the firm as the industry finds itself caught in a complex web of puts and takes. Near-term profitability remains an industrywide concern, with strong recent results threatened by the macroeconomic environment, as labor market pressures and tangled supply chains drive materials prices higher. We also harbor some concerns regarding higher medium-term growth forecasts, with a less amenable financing environment, surging construction costs, and softer restaurant margins all pushing cash-on-cash returns in the wrong direction, as we see it.

We believe that McDonald’s will need to continue to innovate to remain relevant, with fresh beef, the introduction of a large breast chicken sandwich line, and the concept testing of plant-based meats pointing to quickly evolving consumer preferences. While a pivot toward digital and delivery orders remains a large opportunity for the firm, there are some risks to cannibalization of relatively more profitable on-premises, drive-thru, and curbside orders should third-party aggregators see increased adoption.

Risk and Uncertainty Sean Dunlop, Equity Analyst, 1 Feb 2023

Consistent with our quantitative methodology, we believe that McDonald's warrants a Low Morningstar Uncertainty Rating. With a heavily franchised structure and recession-resistant value proposition, the firm's cash flow sensitivity to macroeconomic health appears relatively muted.

While restaurants saw positive momentum across the board during 2021, steep inflation across all of restaurants' prime costs—food, labor, and utilities—underpinned a much more challenging 2022. McDonald's looks to us like one of the better-positioned operators in the restaurant industry in future, but we note that consumer pressure tends to drive a modest mix-shift toward relatively cheaper food at home (grocery) options, which could blunt sales momentum and pricing power if pressure persists. While gradual input cost increases can be offset by investments in automation and higher prices, larger jumps can prove margin dilutive as we estimate a breakpoint around 3% for annual menu price increases (in normal years), after which likely traffic and unit volume contractions drive operating deleverage and lower restaurant margins—exactly what we saw industrywide in 2022.

Considering environmental, social, and governance factors, we view human capital as the biggest risk for McDonald's, consistent with most restaurant operators in our coverage. The firm's push toward a $15 average wage at company-owned stores is one of a handful of factors that are dragging on near-term profitability, though the firm could see a longer-term benefit from commensurately better retention and staffing levels.

Finally, the firm's ability to appeal to changing consumer demands remains integral to success, with brand strength demonstrated by pricing power (a big part of average check) and guest traffic. Deterioration of the firm's brand cachet could slow unit growth, soften restaurant-level profitability, and lead to declining attractiveness for potential franchisees.

Financial Strength Sean Dunlop, Equity Analyst, 1 Feb 2023

We assess McDonald’s financial strength as sound, with the firm maintaining an investment-grade credit rating and reasonable leverage relative to its competitive set. By our calculations, debt/EBITDA clocked in at 3.3 turns at end-2022 (within the long-term guidance range of 3-3.5 times). We think solid free cash flow generation, averaging 30% of revenue through 2025) and high EBIT coverage of interest payments (8 times for 2023, by our forecasts) should be more than sufficient to meet near-term obligations while leaving investment plans and dividends untouched.

While we acknowledge differences in financing philosophies with private equity ownership, we note that McDonald's sports substantially lower leverage than Restaurant Brands International and Yum Brands, two of its largest peers in the QSR space, which operate with around 5-6 times debt/EBITDA. The company's commitment to maintaining an investment-grade credit rating strikes us as prudent, with corporate strength tending to correspond to more attractive franchisee borrowing rates, bolstering franchisee profitability and shortening payback periods.

Finally, the firm maintains substantial cash flow flexibility, with clearly demarcated priorities of growth capital investment, payment of common stock dividends, and share buybacks. We forecast total returns to shareholders of $20 billion between 2023 and 2025 and recognize that $5.8 billion in modeled share buybacks during that period provides a healthy cushion that could easily be repurposed to meet debt service or pursue attractive investment opportunities. With stability of cash flows driven by an increasingly franchised model and well-matched future minimum rent receipts and debt service payments, we do not foresee credit problems on the horizon for McDonald's.

Capital Allocation Sean Dunlop, Equity Analyst, 1 Feb 2023

We assign McDonald's a Standard Morningstar Capital Allocation Rating. Our analysis evaluates what we determine to be the three key facets of management decision-making from the perspective of shareholders: balance sheet strength, investment efficacy, and distributions. Our standard rating results from a sound balance sheet, fair investment strategy, and assessment of shareholder distributions as appropriate.

With respect to the balance sheet, McDonald's benefits from low systematic risk, with staggered debt maturities and very low net debt/enterprise value offsetting higher leverage (3-3.5 times EBITDA is targeted). A highly franchised operating model reduces cash flow uncertainty, while the firm's real estate portfolio offers meaningful tangible assets, an unusual characteristic for heavily franchised restaurant operators that assuages many debtholder concerns.

We view investment decisions as fair, with returns on invested capital increasing throughout our explicit forecast period as the firm benefits from operating leverage and refranchising. The firm's decision to extensively refranchise its U.S. store base during 2015-18 strikes us as clever, bringing the percentage of franchised stores to 95% from 81% in the segment and taking $250 million out of the general and administrative cost base. Thus far, the firm has walked the line well between operating a heavily franchised, decentralized system and continuing to invest in store performance and unit economics, which represents a key investment risk in the space among franchisors. Recent technology investments are encouraging, with diversity in ordering options, customization, and targeted promotions likely representing table stakes in the restaurant industry moving forward. The firm's

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ability to cultivate an attractive end-to-end customer experience will be crucial, with increased touchpoints across systems offering McDonald’s access to previously inaccessible data regarding ordering patterns, customer trends, and menu preferences by demographic. Whether or not the firm is successfully able to leverage such data remains to be seen, and while we maintain our confidence in the management team’s ability to execute initiatives that were in place before the pandemic, our “neutral” strategy rating testifies to our wait-and-see approach regarding the firm’s willingness to make bold and value-accretive investment decisions as we emerge from the shadow of the pandemic. In our view, the firm's targeted 2%-2.5% capital expenditures (as a percentage of system sales) should continue to fall gradually over time, but remains sufficient to support company-owned unit growth, strategic investments, and periodic restaurant remodeling.

Finally, we assess shareholder distributions as appropriate. With an anticipated 2023 dividend of $6.08 per share (which we model growing at a high-single-digit clip over the next three years), the company looks increasingly attractive to income investors. We forecast a dividend payout ratio around 60%, and model more than $20 billion in shareholder returns over the next three years. Importantly, as long as buybacks are executed while the firm trades below our fair value estimate, they represent an attractive use of capital. We believe that the company has done a laudable job avoiding frivolous spending and value-dilutive investments, maintaining attractive returns on invested capital and focusing unit expansion in the more attractive international operated and international developed/licensed markets.

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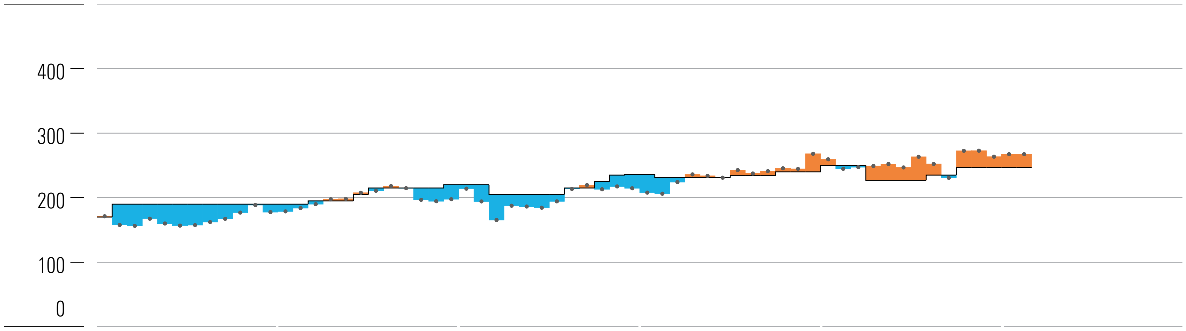
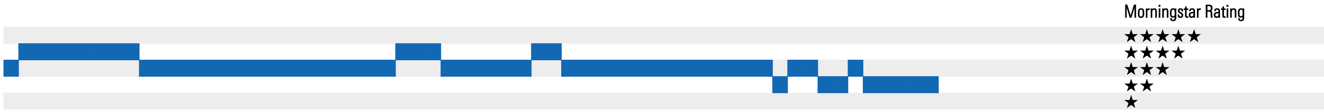
Price vs. Fair Value



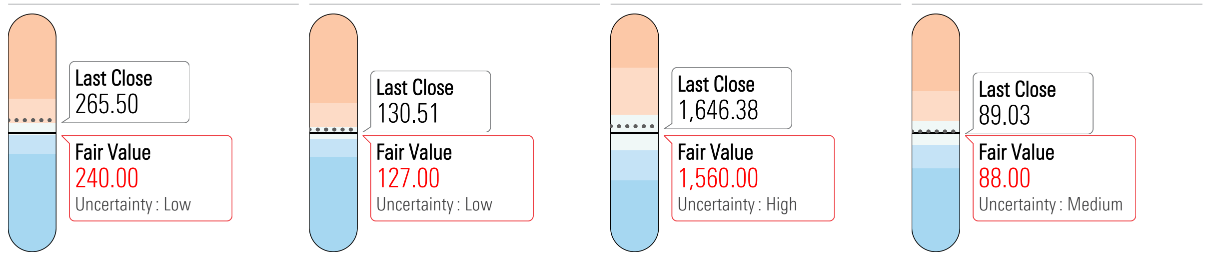
Last Close: 265.50
Fair Value: 240.00
1 Feb 2023 17:10, UTC
Over Valued
Under Valued

	2018	2019	2020	2021	2022	YTD
Price/Fair Value	0.93	0.90	0.91	1.12	1.07	1.11
Total Return %	5.60	13.95	11.14	27.37	0.42	1.47

Morningstar Rating



Competitors



	McDonald's Corp MCD	Yum Brands Inc YUM	Chipotle Mexican Grill Inc CMG	Restaurant Bra...ernational Inc QSR
Economic Moat	Wide	Wide	Wide	Narrow
Moat Trend	Stable	Negative	Stable	Negative
Currency	USD	USD	USD	CAD
Fair Value	240.00 1 Feb 2023 17:10, UTC	127.00 1 Feb 2023 17:10, UTC1	1,560.00 1 Feb 2023 17:10, UTC2	88.00 1 Feb 2023 17:10, UTC3
1-Star Price	300.00	158.75	2,418.00	118.80
5-Star Price	192.00	101.60	936.00	61.60
Assessment	Over Valued 1 Feb 2023	Fairly Valued 31 Jan 2023	Fairly Valued 31 Jan 2023	Fairly Valued 31 Jan 2023
Morningstar Rating	★★1 Feb 2023 17:14, UTC	★★★1 Feb 2023 02:15, UTC	★★★1 Feb 2023 02:15, UTC	★★★1 Feb 2023 02:22, UTC
Analyst	Sean Dunlop, Equity Analyst	Sean Dunlop, Equity Analyst	Sean Dunlop, Equity Analyst	Sean Dunlop, Equity Analyst
Capital Allocation	Standard	Standard	Exemplary	Standard
Price/Fair Value	1.11	1.03	1.06	1.01
Price/Sales	8.55	5.68	5.52	4.77
Price/Book	—	—	19.61	8.80
Price/Earnings	32.10	29.73	57.37	21.60
Dividend Yield	2.12%	1.75%	—	3.20%
Market Cap	195.85 Bil	36.76 Bil	45.64 Bil	27.23 Bil
52-Week Range	217.68—281.67	103.97—132.87	1,196.28—1,754.56	60.37—92.65
Investment Style	Large Core	Mid Core	Large Growth	Large Core

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McDonald's Corp MCD ★★ 1 Feb 2023 17:14, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Moat Trend™	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
265.50 USD 31 Jan 2023	240.00 USD 1 Feb 2023 17:10, UTC	1.11	195.85 USD Bil 31 Jan 2023	Wide	Stable	Low	Standard	1 Feb 2023 06:00, UTC

Morningstar Valuation Model Summary

Financials as of 13 Jan 2023	Actual			Forecast				
Fiscal Year, ends 31 Dec	2020	2021	2022	2023	2024	2025	2026	2027
Revenue (USD Mil)	19,208	23,223	23,182	24,513	26,357	27,441	28,705	29,963
Operating Income (USD Mil)	7,324	10,356	9,371	10,913	11,850	12,600	13,374	14,161
EBITDA (USD Mil)	9,075	12,097	10,922	12,800	13,801	14,614	15,447	16,287
Adjusted EBITDA (USD Mil)	9,075	12,097	10,922	12,800	13,801	14,614	15,447	16,287
Net Income (USD Mil)	4,731	7,545	6,177	7,521	7,934	8,537	9,089	9,649
Adjusted Net Income (USD Mil)	4,536	6,990	7,485	7,521	7,934	8,537	9,089	9,649
Free Cash Flow To The Firm (USD Mil)	5,539	7,880	5,928	8,254	9,136	9,539	10,008	10,699
Weighted Average Diluted Shares Outstanding (Mil)	750	752	741	730	721	709	693	677
Earnings Per Share (Diluted) (USD)	6.31	10.04	8.33	10.30	11.00	12.04	13.12	14.26
Adjusted Earnings Per Share (Diluted) (USD)	6.05	9.30	10.10	10.30	11.00	12.04	13.12	14.26
Dividends Per Share (USD)	5.16	5.34	5.52	6.08	6.61	7.16	7.74	8.35

Margins & Returns as of 13 Jan 2023		Actual			Forecast					
	3 Year Avg	2020	2021	2022	2023	2024	2025	2026	2027	5 Year Avg
Operating Margin %	41.1	38.1	44.6	40.4	44.5	45.0	45.9	46.6	47.3	45.9
EBITDA Margin %	—	47.3	52.1	47.1	52.2	52.4	53.3	53.8	54.4	—
Adjusted EBITDA Margin %	48.8	47.3	52.1	47.1	52.2	52.4	53.3	53.8	54.4	53.2
Net Margin %	27.9	24.6	32.5	26.7	30.7	30.1	31.1	31.7	32.2	31.2
Adjusted Net Margin %	28.7	23.6	30.1	32.3	30.7	30.1	31.1	31.7	32.2	31.2
Free Cash Flow To The Firm Margin %	29.5	28.8	33.9	25.6	33.7	34.7	34.8	34.9	35.7	34.7

Growth & Ratios as of 13 Jan 2023		Actual			Forecast					
	3 Year CAGR	2020	2021	2022	2023	2024	2025	2026	2027	5 Year CAGR
Revenue Growth %	3.2	-8.9	20.9	-0.2	5.7	7.5	4.1	4.6	4.4	5.3
Operating Income Growth %	1.1	-19.3	41.4	-9.5	16.5	8.6	6.3	6.1	5.9	8.6
EBITDA Growth %	0.0	—	—	—	—	—	—	—	—	0.0
Adjusted EBITDA Growth %	0.7	-15.1	33.3	-9.7	17.2	7.8	5.9	5.7	5.4	8.3
Earnings Per Share Growth %	8.8	—	—	—	—	—	—	—	—	7.1
Adjusted Earnings Per Share Growth %	8.8	-22.9	53.7	8.6	2.0	6.8	9.5	8.9	8.7	7.1

Valuation as of 13 Jan 2023	Actual			Forecast				
	2020	2021	2022	2023	2024	2025	2026	2027
Price/Earnings	35.5	28.8	26.1	26.0	24.3	22.2	20.4	18.8
Price/Sales	7.7	6.9	8.6	8.0	7.4	7.1	6.8	6.5
Price/Book	-20.6	-43.8	-32.5	-20.5	-24.5	-27.1	-26.5	-24.6
Price/Cash Flow	31.9	22.5	36.4	27.5	25.1	23.5	22.5	20.8
EV/EBITDA	21.1	17.2	22.4	18.9	17.5	16.5	15.6	14.8
EV/EBIT	26.2	20.0	26.1	22.1	20.4	19.2	18.0	17.0
Dividend Yield %	2.4	2.0	2.1	2.3	2.5	2.7	2.9	3.1
Dividend Payout %	81.8	53.2	66.2	59.1	60.1	59.5	59.0	58.6
Free Cash Flow Yield %	3.1	4.4	2.8	3.6	4.0	4.3	4.5	4.8

Operating Performance / Profitability as of 13 Jan 2023	Actual			Forecast				
Fiscal Year, ends 31 Dec	2020	2021	2022	2023	2024	2025	2026	2027
ROA %	9.5	14.2	11.9	14.9	14.9	14.6	14.5	14.6
ROE %	-59.0	-121.4	-116.5	-96.9	-91.2	-114.9	-130.0	-134.5
ROIC %	13.8	19.7	19.0	22.7	23.5	24.3	25.2	26.1

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McDonald's Corp MCD ★★ 1 Feb 2023 17:14, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Moat Trend™	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
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Financial Leverage

Fiscal Year, ends 31 Dec	Actual 2020	2021	2022	Forecast 2023	2024	2025	2026	2027
Debt/Capital %	126.4	114.8	120.1	133.2	124.0	119.2	117.8	118.0
Assets/Equity	-6.7	-11.7	-8.4	-5.3	-7.1	-8.7	-9.3	-9.2
Net Debt/EBITDA	3.7	2.6	3.1	2.9	2.6	2.4	2.3	2.2
Total Debt/EBITDA	4.1	2.9	3.3	3.0	2.9	3.0	3.0	3.0
EBITDA/ Net Interest Expense	7.5	10.2	9.0	9.5	9.2	10.0	10.2	10.3

Key Valuation Drivers as of 13 Jan 2023

Cost of Equity %	7.5
Pre-Tax Cost of Debt %	5.8
Weighted Average Cost of Capital %	7.0
Long-Run Tax Rate %	23.0
Stage II EBI Growth Rate %	3.8
Stage II Investment Rate %	2.2
Perpetuity Year	20

Additional estimates and scenarios available for download at https://pitchbook.com/.

Discounted Cash Flow Valuation as of 13 Jan 2023

	USD Mil
Present Value Stage I	74,766
Present Value Stage II	58,759
Present Value Stage III	77,312
Total Firm Value	**210,836**
Cash and Equivalents	2,583
Debt	-35,904
Other Adjustments	-2,276
Equity Value	**175,240**
Projected Diluted Shares	732
Fair Value per Share (USD)	**240.00**

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McDonald's Corp MCD ★★ 1 Feb 2023 17:14, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Moat Trend™	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
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Income Statement (USD)	Actual			Forecast				
Fiscal Year, ends 31 Dec	2020	2021	2022	2023	2024	2025	2026	2027
Revenue (Mil)	**19,208**	**23,223**	**23,182**	**24,513**	**26,357**	**27,441**	**28,705**	**29,963**
Cost of Goods Sold (Mil)	9,456	10,643	9,975	10,505	11,225	11,429	11,791	12,139
Gross Profit (Mil)	**9,752**	**12,580**	**13,207**	**14,009**	**15,131**	**16,012**	**16,914**	**17,824**
Selling, General, Administrative & Other Expenses (Mil)	2,546	2,708	2,862	3,217	3,354	3,488	3,619	3,745
Advertising & Marketing Expenses	—	—	—	—	—	—	—	—
Research & Development	—	—	—	—	—	—	—	—
Depreciation & Amortization (if reported separately)	—	—	—	—	—	—	—	—
Adjusted Operating Income (Mil)	**7,324**	**10,356**	**9,371**	**10,913**	**11,850**	**12,600**	**13,374**	**14,161**
Financial Non-Cash (Gains)/Losses (Mil)	0	0	0	0	0	0	0	0
Irregular Cash (Gains)/Losses (Mil)	0	0	0	0	0	0	0	0
Operating Income (Mil)	**7,324**	**10,356**	**9,371**	**10,913**	**11,850**	**12,600**	**13,374**	**14,161**
Net Interest Expense (Mil)	1,183	1,228	1,546	1,393	1,546	1,513	1,570	1,630
Income Tax Expense (Mil)	1,410	1,583	1,648	1,999	2,370	2,550	2,715	2,882
After-Tax Items (Mil)	0	0	0	0	0	0	0	0
(Minority Interest)	—	—	—	—	—	—	—	—
Net Income (Mil)	**4,731**	**7,545**	**6,177**	**7,521**	**7,934**	**8,537**	**9,089**	**9,649**
Adjusted Net Income (Mil)	**4,536**	**6,990**	**7,485**	**7,521**	**7,934**	**8,537**	**9,089**	**9,649**
Weighted Average Diluted Shares Outstanding (Mil)	750	752	741	730	721	709	693	677
Diluted Earnings Per Share	**6.31**	**10.04**	**8.33**	**10.30**	**11.00**	**12.04**	**13.12**	**14.26**
Diluted Adjusted Earnings Per Share	**6.05**	**9.30**	**10.10**	**10.30**	**11.00**	**12.04**	**13.12**	**14.26**
Dividends Per Common Share (USD)	5.16	5.34	5.52	6.08	6.61	7.16	7.74	8.35
EBITDA (Mil)	**9,075**	**12,097**	**10,922**	**12,800**	**13,801**	**14,614**	**15,447**	**16,287**
Adjusted EBITDA (Mil)	**9,075**	**12,097**	**10,922**	**12,800**	**13,801**	**14,614**	**15,447**	**16,287**

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Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Moat Trend™	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
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Key Cash Flow Items (USD)	Actual			Forecast as of 13 Jan				
Fiscal Year, ends 31 Dec	2020	2021	2022	2023	2024	2025	2026	2027
Cash from Working Capital (Mil)	820	437	-619	-170	171	110	-21	83
(Capital Expenditures) (Mil)	-1,641	-2,040	-1,899	-2,255	-2,346	-2,425	-2,503	-2,575
Depreciation (Mil)	1,751	1,742	1,551	1,887	1,951	2,014	2,073	2,125
Amortization (Mil)	0	0	0	0	0	0	0	0
Net New (Investment), Organic (Mil)	**-44**	**-564**	**-1,147**	**-367**	**11**	**-163**	**-290**	**-206**
(Purchases)/Sales of Companies & Assets (Mil)	38	-72	-322	0	0	0	0	0
Net New (Investment), Total (Mil)	**-7**	**-636**	**-1,469**	**-367**	**11**	**-163**	**-290**	**-206**
Other Non-Cash Items, From Cash Flows (Mil)	-103	-51	0	0	0	0	0	0
Free Cash Flow to the Firm (Mil)	**5,539**	**7,880**	**5,928**	**8,254**	**9,136**	**9,539**	**10,008**	**10,699**

Balance Sheet (USD)	Actual			Forecast				
Fiscal Year, ends 31 Dec	2020	2021	2022	2023	2024	2025	2026	2027
Assets								
Cash and Equivalents (Mil)	3,449	4,709	2,583	1,024	5,071	8,616	11,207	12,418
Inventory (Mil)	51	56	56	56	56	57	59	61
Accounts Receivable (Mil)	2,110	1,872	1,872	2,217	2,212	2,334	2,482	2,551
Net Property, Plant and Equipment (Mil)	24,958	24,721	23,774	24,141	24,537	24,948	25,379	25,828
Goodwill (Mil)	2,773	2,783	2,783	2,783	2,783	2,783	2,783	2,783
Other Intangibles (Mil)	0	0	0	0	0	0	0	0
Other Operating Assets (Mil)	15,758	15,265	14,679	15,522	16,690	17,376	18,177	18,973
Non-Operating Assets (Mil)	3,527	4,450	4,689	4,689	4,689	4,689	4,689	4,689
Total Assets (Mil)	**52,627**	**53,854**	**50,436**	**50,431**	**56,037**	**60,804**	**64,775**	**67,304**
Liabilities								
Accounts Payable (Mil)	741	706	706	754	806	821	847	872
Debt (Mil)	37,440	35,623	35,904	38,236	40,610	43,447	46,324	48,100
Other Operating Liabilities (Mil)	22,270	22,127	19,830	20,969	22,488	23,531	24,596	25,683
Non-Operating Liabilities (Mil)	0	0	0	0	0	0	0	0
Total Liabilities (Mil)	**60,452**	**58,455**	**56,439**	**59,959**	**63,903**	**67,799**	**71,767**	**74,655**
Equity								
Shareholders' Equity (Mil)	-7,825	-4,601	-6,003	-9,527	-7,866	-6,995	-6,992	-7,351
Minority Interest (Mil)	—	—	—	0	0	0	0	0
Total Equity (Mil)	**-7,825**	**-4,601**	**-6,003**	**-9,527**	**-7,866**	**-6,995**	**-6,992**	**-7,351**

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Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Moat Trend™	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
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Management & Ownership

Management Activity as of 31 Mar 2022

Name	Position	Share Held	Report Date*	Insider Activity
Kevin M. Ozan	Senior Executive Vice President, Strategic Initiatives	21,968	31 Mar 2022	66,331
Christopher J. Kempczinski	Director, President and Chief Executive Officer	19,027	31 Mar 2022	148,139
Katherine Beirne Fallon	Corporate Executive Vice President and Chief Global Impact Officer	18,025	31 Mar 2022	16,026
Francesca A. DeBiase	Corporate Executive Vice President and Global Chief Supply Chain Officer	20,745	31 Mar 2022	21,770
Daniel Henry	Corporate Executive Vice President and Chief Information Officer	5,035	31 Mar 2022	21,647
Lloyd H. Dean	Independent Director	11,218	31 Mar 2019	1,191
John W. Rogers	Independent Director	151,883	31 Dec 2022	1,191
Richard H. Lenny	Independent Director	41,759	31 Dec 2022	726
Anthony G. Capuano	Independent Director	417	31 Dec 2022	337
Miles D. White	Independent Director	24,765	31 Dec 2022	726

Fund Ownership as of 31 Jan 2023

Top Owners	% of Shares Held	% of Fund Assets	Change (k)	Portfolio Date
Vanguard Total Stock Market Index Fund	3.04	0.51	93,584	31 Dec 2022
Vanguard US Total Market Shares ETF	3.04	0.54	93,584	31 Dec 2022
Vanguard Instl Ttl Stck Mkt Idx Tr	3.00	0.48	169,261	30 Sep 2022
Vanguard 500 Index Fund	2.31	0.60	72,652	31 Dec 2022
SPDR® S&P 500 ETF Trust	1.11	0.59	-15,260	30 Jan 2023
Concentrated Holders				
Fidelity® Select Leisure Portfolio	0.05	18.78	6,600	31 Dec 2022
Daiwa FoodTech Mother Fund	0.00	9.21	20,820	1 Aug 2022
FT S&P Dividend Atrts By-Wrt 17	0.00	8.38	23	25 Jan 2023
FT S&P Dividend Atrts By-Wrt 16	0.00	7.58	28	25 Jan 2023
FT S&P Dividend Atrts By-Wrt 19	0.00	7.08	32	25 Jan 2023

Institutional Transactions as of 31 Jan 2023

Top 5 Buyers	% of Shares Held	% of Fund Assets	Shrs Bought/Sold (k)	Portfolio Date
T. Rowe Price Associates, Inc.	1.07	0.30	1,105,231	30 Sep 2022
FMR Inc	0.60	0.11	904,289	30 Sep 2022
1832 Asset Management L.P	0.40	1.44	903,014	30 Sep 2022
Capital Research Global Investors	0.73	0.40	634,859	30 Sep 2022
Assenagon Asset Management SA	0.10	0.68	594,343	31 Dec 2022
Top 5 Sellers				
Wellington Management Company LLP	2.37	0.85	-2,425,969	30 Sep 2022
JPMorgan Chase & Co	2.56	0.62	-912,879	30 Sep 2022
Magellan Asset Management Limited	0.42	5.01	-846,259	30 Sep 2022
Renaissance Technologies Corp	0.07	0.16	-650,900	30 Sep 2022
Nuveen Asset Management, LLC	0.71	0.48	-634,167	30 Sep 2022

*Represents the date on which the owner's name, position, and common shares held were reported by the holder or issuer.

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Comparable Company Analysis

These companies are chosen by the analyst and the data are shown by nearest calendar year in descending market capitalization order.

Valuation Analysis as of 13 Jan 2023

Company/Ticker	Price/Earnings			EV/EBITDA			Price/Free Cash Flow			Price/Book			Price/Sales		
	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)
Yum Brands Inc YUM	31.1	27.4	27.8	22.2	19.9	18.3	27.2	27.8	28.4	-5.0	-4.3	-4.0	6.1	5.4	5.0
Chipotle Mexican Grill Inc CMG	75.3	49.5	35.8	48.7	33.0	25.5	58.5	54.9	40.0	21.4	20.0	17.6	6.5	5.3	4.6
Restaurant Brands International Inc QSR	28.2	—	33.2	18.7	19.9	21.2	14.6	14.3	18.4	15.9	—	12.3	4.1	4.2	4.1
Average	44.9	38.5	32.3	29.9	24.3	21.7	33.4	32.3	28.9	10.8	7.8	8.6	5.6	5.0	4.6
McDonald's Corp MCD	**26.1**	**26.0**	**24.3**	**22.4**	**18.9**	**17.5**	**36.4**	**27.5**	**25.1**	**-32.5**	**-20.5**	**-24.5**	**8.6**	**8.0**	**7.4**

Returns Analysis as of 13 Jan 2023

Company/Ticker	ROIC %			Adjusted ROIC %			Return on Equity %			Return on Assets %			Dividend Yield %		
	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)
Yum Brands Inc YUM	66.1	78.6	80.4	50.8	60.5	62.8	-19.4	-15.0	-14.7	26.7	21.0	18.5	1.4	1.8	2.1
Chipotle Mexican Grill Inc CMG	14.8	20.3	24.8	14.7	20.3	24.7	30.3	40.1	51.7	10.3	13.5	17.3	—	—	—
Restaurant Brands International Inc QSR	13.9	16.7	14.6	9.2	11.0	9.5	56.9	55.8	38.3	5.5	5.9	4.7	2.8	2.4	2.6
Average	31.6	38.5	39.9	24.9	30.6	32.3	22.6	27.0	25.1	14.2	13.5	13.5	2.1	2.1	2.4
McDonald's Corp MCD	**19.0**	**22.7**	**23.5**	**20.5**	**24.5**	**25.3**	**-116.5**	**-96.9**	**-91.2**	**11.9**	**14.9**	**14.9**	**2.1**	**2.3**	**2.5**

Growth Analysis as of 13 Jan 2023

Company/Ticker	Revenue Growth %			EBIT Growth %			EPS Growth %			FCF Growth %			DPS Growth %		
	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)
Yum Brands Inc YUM	16.5	4.2	7.8	29.8	7.1	8.7	23.0	6.6	-1.2	73.1	-11.4	8.9	6.4	14.0	19.6
Chipotle Mexican Grill Inc CMG	26.1	15.1	15.4	177.4	47.3	34.9	85.4	43.3	38.3	239.6	7.2	43.5	—	—	—
Restaurant Brands International Inc QSR	15.5	13.0	3.2	33.4	10.9	-8.1	34.5	—	—	-19.2	164.3	-29.5	1.9	1.9	5.4
Average	19.4	10.8	8.8	80.2	21.8	11.8	47.6	16.6	12.4	97.8	53.4	7.6	2.8	5.3	8.3
McDonald's Corp MCD	**-0.2**	**5.7**	**7.5**	**-9.5**	**16.5**	**8.6**	**8.6**	**2.0**	**6.8**	**-24.8**	**39.2**	**10.7**	**3.4**	**10.1**	**8.6**

Profitability Analysis as of 13 Jan 2023

Company/Ticker	Gross Margin %			EBITDA Margin %			Operating Margin %			Net Margin %			FCF Margin %		
	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)
Yum Brands Inc YUM	73.8	74.4	75.2	34.5	35.1	35.4	32.0	32.9	33.2	20.5	20.2	18.0	22.4	19.3	17.5
Chipotle Mexican Grill Inc CMG	22.6	24.3	25.9	14.0	16.9	19.0	10.7	13.6	16.0	8.6	10.5	12.3	11.1	9.6	11.4
Restaurant Brands International Inc QSR	58.6	57.2	56.8	36.7	35.2	31.8	32.7	32.1	28.6	22.0	22.7	18.0	28.2	29.3	22.1
Average	51.7	52.0	52.6	28.4	29.1	28.7	25.1	26.2	25.9	17.0	17.8	16.1	20.6	19.4	17.0
McDonald's Corp MCD	**57.0**	**57.2**	**57.4**	**47.1**	**52.2**	**52.4**	**40.4**	**44.5**	**45.0**	**32.3**	**30.7**	**30.1**	**23.7**	**29.0**	**29.6**

Leverage Analysis as of 13 Jan 2023

Company/Ticker	Debt/Equity %			Debt/Total Cap %			EBITDA/Net Int. Exp			Total Debt/EBITDA			Asset/Equity		
	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)
Yum Brands Inc YUM	-134.3	-135.2	-149.7	391.4	384.4	301.3	4.2	4.5	3.4	5.0	4.9	5.3	-0.7	-0.7	-0.9
Chipotle Mexican Grill Inc CMG	0.0	0.0	0.0	0.0	0.0	0.0	-135.5	-90.3	-380.0	0.0	0.0	0.0	2.9	3.0	3.0
Restaurant Brands International Inc QSR	581.7	495.5	390.8	85.3	83.2	79.6	4.2	4.3	4.7	6.2	6.6	6.0	10.4	8.8	7.6
Average	149.1	120.1	80.4	158.9	155.9	127.0	-42.4	-27.2	-124.0	3.7	3.8	3.8	4.2	3.7	3.2
McDonald's Corp MCD	**-598.1**	**-401.3**	**-516.3**	**120.1**	**133.2**	**124.0**	**9.0**	**9.5**	**9.2**	**3.3**	**3.0**	**2.9**	**-8.4**	**-5.3**	**-7.1**

Liquidity Analysis as of 13 Jan 2023

Company/Ticker	Cash per Share			Current Ratio			Quick Ratio			Cash/Short-Term Debt			Payout Ratio %		
	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)
Yum Brands Inc YUM	1.6	2.3	7.5	1.1	1.0	1.1	1.1	1.0	1.1	7.1	1.6	1.3	38.4	51.7	58.0
Chipotle Mexican Grill Inc CMG	29.0	20.9	22.3	1.6	1.3	1.4	1.5	1.3	1.4	—	—	—	0.0	0.0	0.0
Restaurant Brands International Inc QSR	2.3	—	5.4	1.0	2.5	1.6	0.9	2.5	1.6	11.3	43.4	—	78.5	—	85.0
Average	9.1	6.1	10.6	1.3	1.4	1.3	1.2	1.4	1.3	4.6	11.4	0.8	45.8	27.7	50.8
McDonald's Corp MCD	**3.5**	**1.4**	**7.0**	**1.4**	**0.7**	**1.2**	**1.4**	**0.7**	**1.2**	**—**	**0.4**	**1.9**	**66.2**	**59.1**	**60.1**

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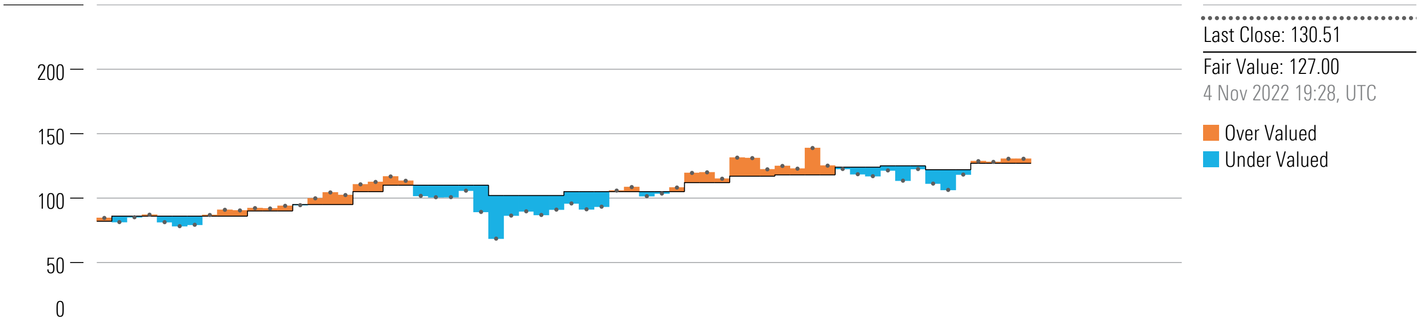
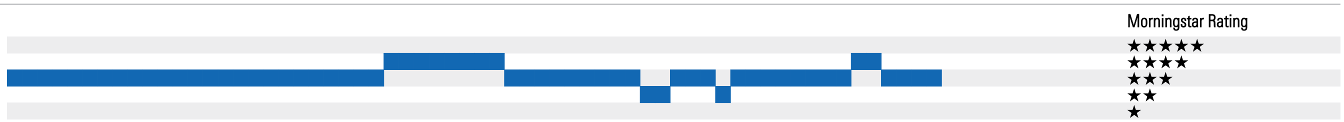
McDonald's Corp MCD ★★ 1 Feb 2023 17:14, UTC

Competitors Price vs. Fair Value

Yum Brands Inc YUM

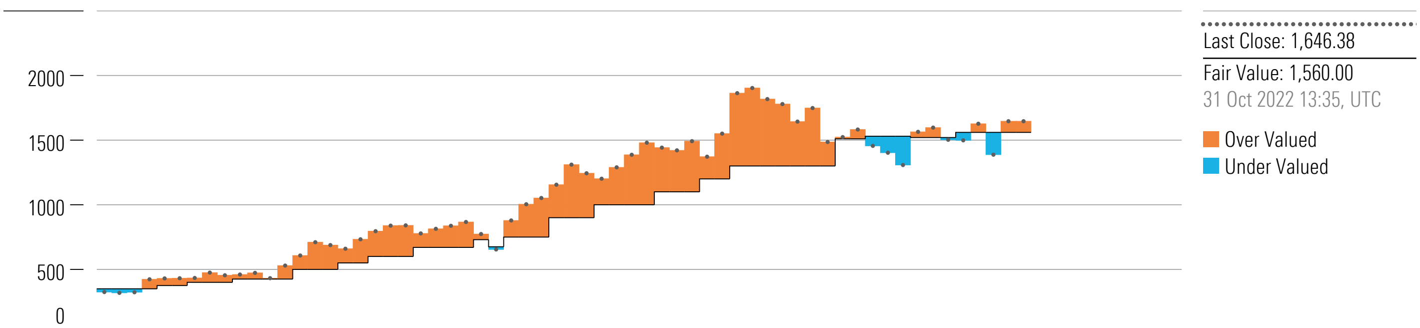


	2018	2019	2020	2021	2022	YTD	
	1.02	0.92	1.03	1.18	1.01	1.03	Price/Fair Value
	14.40	11.41	9.64	29.75	-6.12	1.90	Total Return %

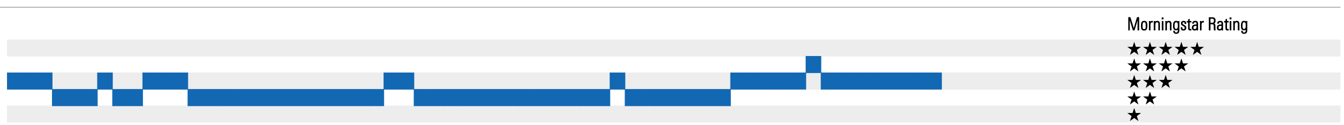


Total Return % as of 31 Jan 2023. Last Close as of 31 Jan 2023. Fair Value as of 4 Nov 2022 19:28, UTC.

Chipotle Mexican Grill Inc CMG



	2018	2019	2020	2021	2022	YTD	
	1.02	1.25	1.39	1.34	0.89	1.06	Price/Fair Value
	49.39	93.87	65.65	26.07	-20.64	18.66	Total Return %



Total Return % as of 31 Jan 2023. Last Close as of 31 Jan 2023. Fair Value as of 31 Oct 2022 13:35, UTC.

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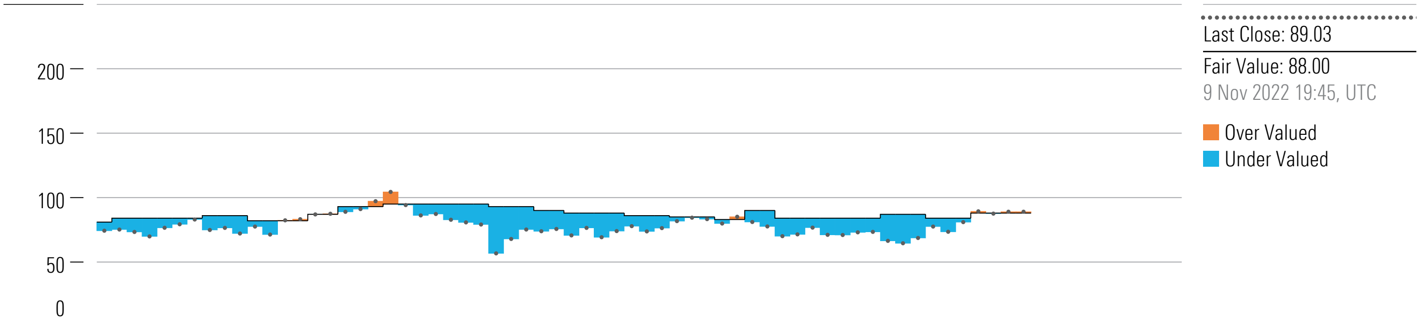
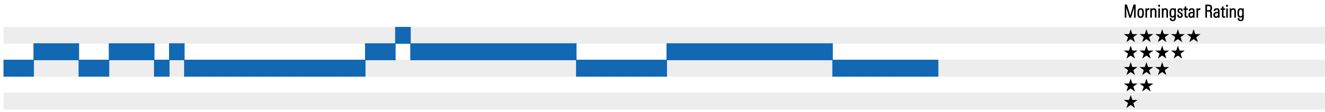
Competitors Price vs. Fair Value (Continued)

Restaurant Brands International Inc QSR



	2018	2019	2020	2021	2022	YTD	
	0.87	0.87	0.91	0.91	1.00	1.01	Price/Fair Value
	-4.66	19.79	-2.61	2.00	17.87	1.67	Total Return %

Morningstar Rating



Total Return % as of 31 Jan 2023. Last Close as of 31 Jan 2023. Fair Value as of 9 Nov 2022 19:45, UTC.

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McDonald's Corp MCD ★★ 1 Feb 2023 17:14, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Moat Trend™	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
265.50 USD 31 Jan 2023	240.00 USD 1 Feb 2023 17:10, UTC	1.11	195.85 USD Bil 31 Jan 2023	Wide	Stable	Low	Standard	1 Feb 2023 06:00, UTC

Recent Analyst Notes

Restaurants' Value Menu Looks Unappetizing as Market Sentiment Outruns Fundamentals Sean Dunlop,Equity Analyst,24 Jan 2023

We expect sluggish sales growth to represent the key issue for the restaurant industry in 2023, following a year of investor concern regarding inflated input costs and margin compression. Though we see modest upside in wide-moat Domino's and view wide-moat Chipotle shares as fairly valued, the industry trades at a 5% market-cap weighted premium to our fair value estimates, suggesting that current entry prices are less than salient.While profitability is a genuine concern, with current restaurant margins in our coverage universe falling 440 basis points below their long-term benchmarks, we expect stabilization in 2023 as commodity costs normalize and as labor imbalances are gradually corrected by a modest increase in U.S. unemployment. More immediately concerning? Consumers are spending nearly 20% more on restaurant meals than usual (share of wallet), despite signs that traffic is declining among quick-service operators, suggesting that consumers are getting less value for their money in restaurantland. Price-led sales growth tends to have an expiration date, and with our calculations suggesting that the difference in per-meal cost across those channels has widened by 3% from a quarter ago (to $4.30), we wouldn't be surprised to see a mix-shift toward the cheaper grocery channel. Consequently, we expect restaurants' pricing power to slow sharply over the balance of the year, with USDA estimates for 4%-5% increases in food away from home consumer prices (analogous to restaurant price increases) looking cogent to us.By and large, we believe that market prices suggest strong sales momentum and meaningful operating leverage in 2023, which we expect will prove difficult to realize. The relative advantage lies with operators that boast a cost advantage or pricing power, consistent with our moat ratings, though we don't expect a full margin recovery until 2027 or 2028.

McDonald's Strong Relative Value Props Up Results, but Shares Continue to Trade at a Premium Sean Dunlop,Equity Analyst,27 Oct 2022

Wide-moat McDonald's posted sales and earnings in line with our expectations, with $5.87 billion in sales and $2.68 in diluted EPS narrowly missing our top-line forecast of $5.90 billion, but edging our $2.47 EPS estimate. In our view, there are two key takeaways from the quarter: McDonald's core business continues to perform admirably, and very real near-term pressures linger on the horizon, which may not be fully captured by market prices. We're particularly impressed by positive guest traffic in the United States, representing an acceleration on a linked-quarter basis and suggesting that the banner is taking share, particularly when considered in conjunction with declining industry traffic. All things considered, we intend to raise our $235 fair value estimate by around 5%, leaving shares slightly overpriced after a low-single-digit pop in early trading.To our first point, we view third-quarter results, with 6.1% U.S. same-store sales growth, surging loyalty program participation (25 million active members in the U.S.), and digital success (33% of sales in the firm's top six markets) as reflective of astute digital and real estate investments made over the past few years, with the business well positioned to

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Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Moat Trend™	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
265.50 USD 31 Jan 2023	240.00 USD 1 Feb 2023 17:10, UTC	1.11	195.85 USD Bil 31 Jan 2023	Wide	Stable	Low	Standard	1 Feb 2023 06:00, UTC

navigate the turbulence we expect over the 12-18 months. Management's decision to raise its dividend by 10% was an encouraging proof point, while traffic gains against the backdrop of 10% price increases are suggestive of a brand that's resonating well with consumers.Nevertheless, a potential recession is good for no one, despite McDonald's relatively privileged positioning. The ability to keep the system financially healthy with targeted support is a strategic advantage, but we continue to believe that market prices understate the degree of near-term sales and margin pressure that a downturn would espouse, with our base case not suggesting a full restaurant margin recovery until the end of 2024.

Restaurant Pulse Q3 2022: Fast Food Stocks Look Appetizing as Macro Pressure Drives Belt Tightening Sean Dunlop,Equity Analyst,6 Oct 2022

Our restaurant coverage has taken a beating over the past two quarters, shedding 8%-10% of its market cap (albeit modestly ahead of a 12%-13% decline in Morningstar's U.S. Large Cap Index) as inflation and a weaker consumer have driven sagging near-term prospects. With wages and food costs each up about 20% since the onset of the COVID-19 pandemic, restauranteurs have been forced to absorb substantial pressure: across our coverage, we've seen a median decline of 630 basis points of restaurant margin over the past 12 months. We don't expect a full margin recovery until fiscal 2024, particularly since consumers naturally shift spending towards the relatively cheaper grocery channel amidst periods of economic pressure, blunting restaurant operators' ability to offset inflation with price increases in the higher cost per meal channel.Nevertheless, we see opportunities in the space for patient investors: only rarely do restaurants trade at the 10%-15% discount to our intrinsic valuation that we currently see, and we've already pulled down our comparable store sales forecasts by 2%-3% across the board for the next three to five quarters to adjust for what we view as a nearly inevitable near-term pullback in demand (and restaurant-level margins proportionately to adjust for operating deleverage).Looking forward, we prefer companies that maintain diversification across quick-service categories, heavily franchised structures, which relieve inflationary pressure in food costs and hourly wages (since those are borne by franchisees), and value-oriented fare in an environment of slower growth—or even an outright recession. The piece also outlines the potential fair value impact from California's Fast Act, which we continue to view as well-intentioned but inappropriately crafted.Our top picks in the space are wide-moat Domino's Pizza and Starbucks, though Restaurant Brands International and Yum Brands also trade at a meaningful discount to our intrinsic valuation.

McDonald's Marquee Brand and Value Proposition Drive Solid Q2 Results Despite Consumer Pressure Sean Dunlop,Equity Analyst,26 Jul 2022

Wide-moat McDonald's posted strong second-quarter results, with revenue of $5.7 billion and adjusted earnings per share of $2.55 healthily outpacing our forecasts of $5.4 billion and $2.16, respectively. Impressively, those results came against a backdrop of deteriorating consumer confidence, corroborating our view that the burger chain stands to benefit from the trade-down effect, whereby value-seeking consumers eschew full-service and fast-casual meals in favor of cheaper fast-food substitutes. Given its value position, marquee brand, and heavily

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Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Moat Trend™	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
265.50 USD 31 Jan 2023	240.00 USD 1 Feb 2023 17:10, UTC	1.11	195.85 USD Bil 31 Jan 2023	Wide	Stable	Low	Standard	1 Feb 2023 06:00, UTC

franchised system, McDonald's strikes us as the most recession-resistant name in our restaurant coverage, representing one of just a handful of chains that were able to increase comparable-store sales through 2007-09. However, we believe that these characteristics are already well appreciated by the market; McDonald's is the lone operator in our coverage that trades at a premium to our valuation. We expect to raise our $227 fair value estimate by a low-single-digit percentage due to time value and robust quarterly sales.We continue to view value-oriented quick-service restaurants as well positioned to outperform on a relative basis in the current environment. While we maintain that tangled supply chains and inflationary pressures will take a few years for the operator to fully price through (we don't expect a full year of normalized restaurant-level profitability until 2024), and a modest mix shift toward the lower per-meal cost grocery channel may drag on sales, we see no reason to meaningfully alter our forecast for long-term restaurant margin (17.5%-18.5%) or comparable-store sales growth (2.5%-3%), though current pressure will probably result in slower near-term unit growth.McDonald's took an expected $1.2 billion pretax charge to account for the sale and debranding of its Russian units, partially offset by a $271 million gain on the sale of its Dynamic Yield subsidiary.

Restaurant Industry Offers Pockets of Opportunity; We're Buying Starbucks and RBI Sean Dunlop,Equity Analyst,8 Jul 2022

We see pockets of attractive value in the restaurant industry despite a surge in share prices over the past two weeks, with the median company in our coverage trading at about a 10% discount to our intrinsic valuation. Our top picks, wide-moat Starbucks and narrow-moat Restaurant Brands International, enjoy even wider margins of safety, trading around 20%-25% below our $100 and $67 fair value estimates, respectively. We believe this warrants investor attention. Observing the broader landscape, we flag a triumvirate of near-term pressures likely underpinning the time horizon-driven divergence between market pricing and our own forecasts: elevated inflation, particularly on the commodities and food cost of goods sold portion of the ledger; macroeconomic uncertainty driving softening consumer sentiment; and a rising risk-free rate as the federal-funds and 10-year Treasury rates continue to rise. Nevertheless, we believe that restaurants, particularly heavily franchised quick-service operators, are relatively recession-resistant, a view borne out by recession sensitivities through the 2007-09 downturn. Further, we adhere to the Morningstar view that a near-term recession belongs outside our base-case scenario, though steep inflation and contracting real incomes will figure to slow top-line growth for a couple of quarters as consumers turn to relatively cheaper alternatives. In the long run, we suspect that operators with strong brand intangible assets should be able to pass along input cost inflation, though we don't expect a full year of normalized restaurant-level profitability until 2024, given the degree of cost pressures and consumers' willingness to bear price hikes (elasticity), with customers exhibiting a historical penchant to modestly shift spending towards the lower-cost grocery channel during periods of strain.

Flurry of Leadership Changes at McDonald's Shouldn't Alter Firm's Course; We Maintain Our $227 FVE Sean Dunlop,Equity Analyst,27 Jun 2022

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McDonald's Corp MCD ★★ 1 Feb 2023 17:14, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Moat Trend™	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
265.50 USD 31 Jan 2023	240.00 USD 1 Feb 2023 17:10, UTC	1.11	195.85 USD Bil 31 Jan 2023	Wide	Stable	Low	Standard	1 Feb 2023 06:00, UTC

Wide-moat McDonald's announced a trio of changes among its executive team, with chief financial officer Kevin Ozan, chief global supply chain officer Francesca DeBiase, and chief impact officer Katie Fallon set to depart over the next year. Ozan will stay on with the brand until his retirement in mid-2023, overseeing strategic initiatives and temporarily managing Fallon's responsibilities until a successor is identified. We don't expect to change our standard capital allocation rating or our $227 fair value estimate as a result of the transition.As the most publicly visible of the three departures, Ozan's contributions have been meaningful and have helped shape the brand through the halcyon days of the 2000s, a slowdown in the early 2010s, the firm's massive turnaround in the late 2010s, and its handling of the COVID-19 pandemic over the past two and a half years. He leaves behind big shoes to fill, having joined the brand in 1997 (assuming the CFO role in 2015), and will be replaced by a longtime McDonald's veteran in Ian Borden, who has been with the brand for nearly 30 years, most recently serving as president of the international business.DeBiase's team navigated unprecedented supply chain disruptions over the past two years with aplomb; she will be replaced by Marion Gross, the current chief supply chain officer for the North American business and another nearly 30-year McDonald's veteran. Given that the two positions with the most sweeping financial repercussions are being filled by longtime McDonald's acolytes (an encouraging sign, attesting to the conscientious development of a deep management bench, in our view), we expect few changes to the firm's strategic roadmap, underpinning our decision to leave our capital allocation rating untouched.

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.

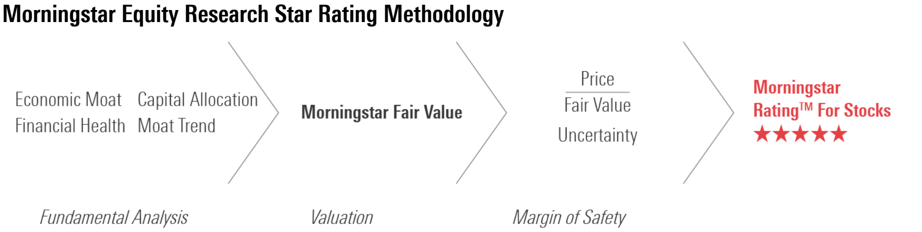
When considering a company's moat, we also assess whether there is a substantial threat of value destruction, stemming from risks related to ESG, industry disruption, financial health, or other idiosyncratic issues. In this context, a risk is considered potentially value destructive if its occurrence 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.

To assess the sustainability of excess profits, analysts perform ongoing assessments of the moat trend. A firm's moat trend is positive in cases where we think its sources of competitive advantage are growing stronger; stable where we don't anticipate changes to competitive advantages over the next several years; or negative when we see signs of deterioration.

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.

Morningstar Equity Research Star Rating Methodology



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

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Research Methodology for Valuing Companies

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 anything 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.

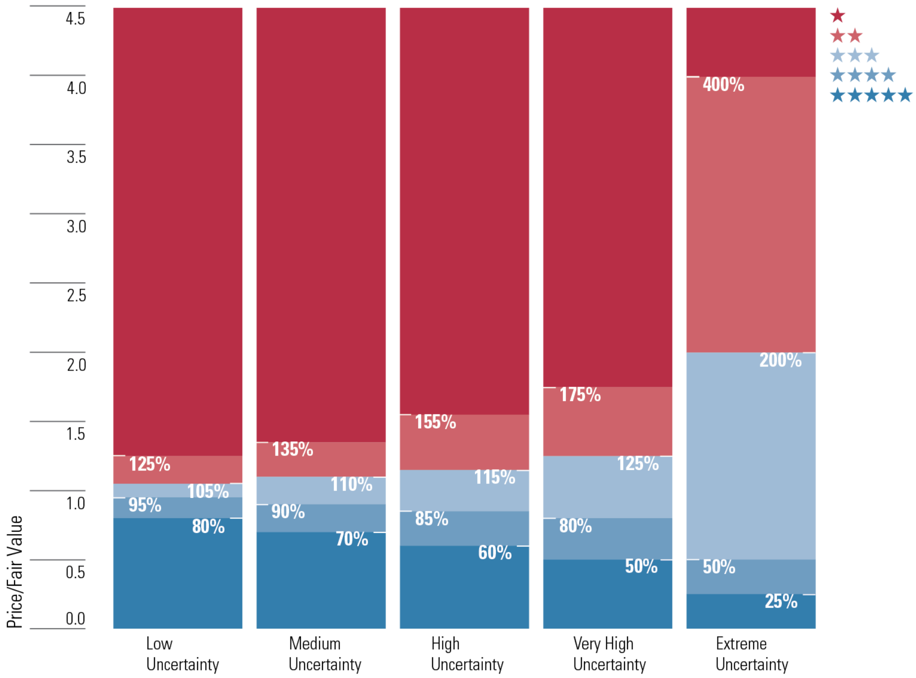
Our recommended margin of safety—the discount to fair value demanded before we'd recommend buying or selling the stock—widens as our uncertainty of the estimated value of the equity increases. The more uncertain we are about the potential dispersion of outcomes, the greater the discount we require relative 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.

Morningstar Equity Research Star Rating Methodology



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

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

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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 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.

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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/

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