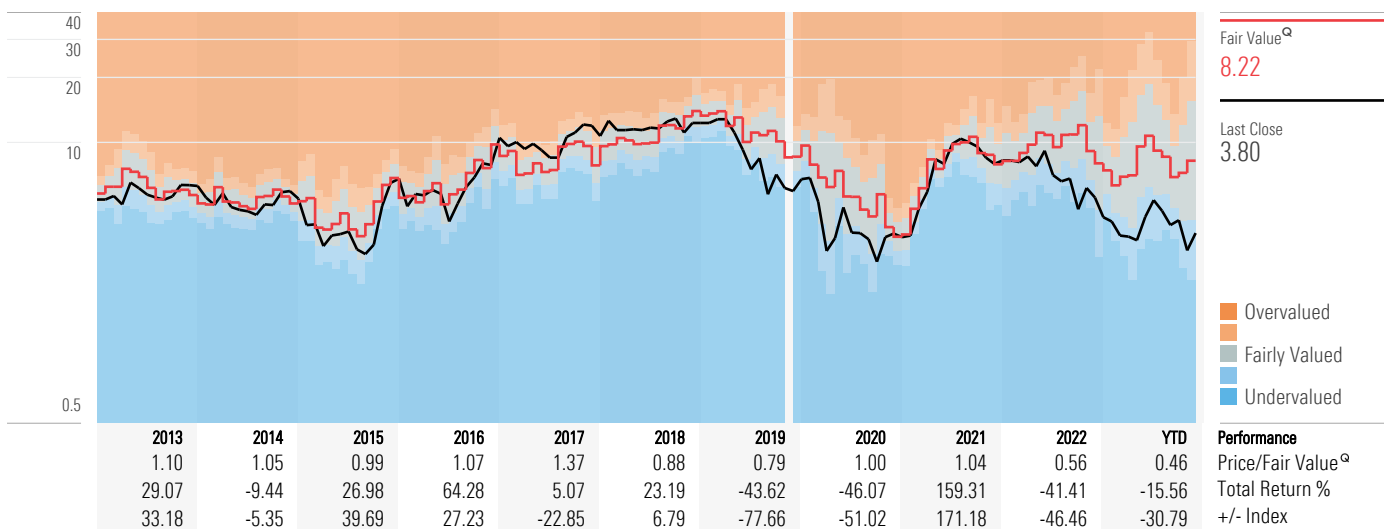


Braskem SA Class A XBRK ★★★ Q 29 Nov 2023, 23:39 UTC

| | | | | | | | | |
|-----------------------------------|---------------------------------|--------------------------------------|--|----------------------------------|-------------------|-------------------------|-----------------|-----------------|
| Economic Moat ^Q | Uncertainty ^Q | Price/Fair Value ^Q | ESG Risk Rating Assessment ¹ | Trailing Dividend Yield % | Market Cap | Investment Style | Sector | Industry |
| Narrow | Extreme | 0.5 | 1 Nov 2023 05:00, UTC | 30.02 | 3.0003 Bil | Mid Core | Basic Materials | Chemicals |



As of 29 Nov 2023 | Index: Morningstar Brazil GR BRL. Fair Value data as of 29 Nov 2023, 23:39 UTC.

¹The ESG Risk Rating Assessment is a representation of Sustainalytics' ESG Risk Rating. Lee Davidson, Chief Analytics Officer for Morningstar, Inc, oversees the methodology that supports Quantitative Fair Value Estimates and Quantitative Star Ratings. Mr. Davidson is guided by the Morningstar, Inc. Code of Ethics in carrying out his responsibilities. For information regarding Conflicts of Interests, visit <http://global.morningstar.com/equitydisclosures>.

Key Metrics as of 24 Nov 2023

| Metrics | Value | Percentile in Sector |
|------------------------|-------|----------------------|
| Earnings Yield (%) | -29.2 | 21.0 |
| Sales Yield (%) | 451.3 | 95.0 |
| Book Value Yield (%) | 31.1 | 23.0 |
| Return on Assets (%)* | -5.1 | 46.0 |
| Revenue(Bil)* | 14.9 | 96.0 |
| Market Value (Bil) | 3.3 | 88.0 |
| Enterprise Value (Bil) | 11.7 | 94.0 |
| EV/MV Ratio | 3.6 | 97.0 |
| Volatility TTM (%) | 42.8 | 48.0 |
| Drawdown TTM (%) | 48.1 | 56.0 |
| Volume (Mil) | 3.9 | 88.0 |

*30 Sep 2023

Business Description

Braskem SA manufactures and sells chemicals, petrochemicals, fuels, and utilities. The company's geographical segments include Brazil; the United States and Europe and Mexico. It derives a majority of revenue from Brazil. It produces olefins, such as ethylene, polymer and chemical-grade propylene, butadiene and butene-1; fuels, such as automotive gasoline, liquefied petroleum gas, or LPG, ethyl tertiary-butyl ether, or ETBE, and methyl tertiary-butyl ether, or MTBE; intermediates, such as cumene and others.

Valuation ^Q as of 30 Nov 2023

Morningstar affirms a 3-star quantitative rating for Braskem. We calculate this outcome using the company's underlying model-driven valuation and uncertainty scores.

The stock's last closing price was 3.80, a discount of 53.79% to its Quantitative Fair Value estimate of 8.22. This discount has ranged between 57.99% and 35.87% over the past year. The stock's price to fair value ratio is at the 9th percentile in our global equity coverage universe for this methodology and at the 28th percentile relative to its peers in the basic materials sector.

Braskem furthermore holds a Extreme quantitative uncertainty rating.

The company's quantitative star rating dates to after 10/13/2023, before which it was 4-star. Similarly, the firm's uncertainty rating changed from Very High to Extreme after 10/27/2023.

We examine the financials and market statistics for Braskem to determine these ratings. Its enterprise value-to-market value ratio is 3.57 and its earnings yield is -29.58%. These fall at the 94th and 15th percentiles in the equity universe and at the 95th and 21st in the basic materials sector, respectively.

Economic Moat ^Q as of 29 Nov 2023

Morningstar maintains a Narrow quantitative moat rating on the company. The firm's quantitative moat score of 0.72 sits at the 77th percentile in the basic materials sector. This is a decrease from 0.85, the maximum of its moat scores over the past year. The quantitative financial health rating for Braskem is Moderate. Its financial health score, termed Distance to Default, sits at the 9th percentile in the universe and 7th percentile in the sector.

The significant drivers of these ratings are the company's book value yield and annualized trailing 12-month volatility. The book value yield for Braskem is 31.51%, and its annualized trailing 12-month volatility is 42.44%. They sit at the 28th and 66th percentile in the global equity universe, respectively.

Fundamentals as of 29 Nov 2023

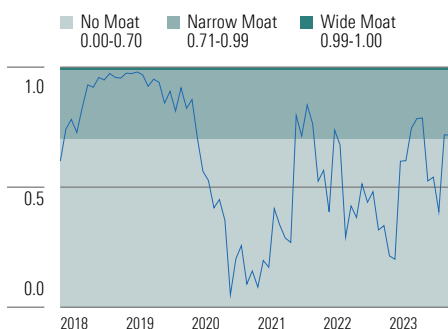
Braskem reports losses per share of -5.92. Its return on invested capital is -3.38%. These values are calculated over a trailing 12-month period.

Contact

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+55 1135769000


<https://www.braskem.com.br>

Economic Moat ^Q History as of 29 Nov 2023



Braskem SA Class A XBRK ★★★

Q 29 Nov 2023, 23:39 UTC

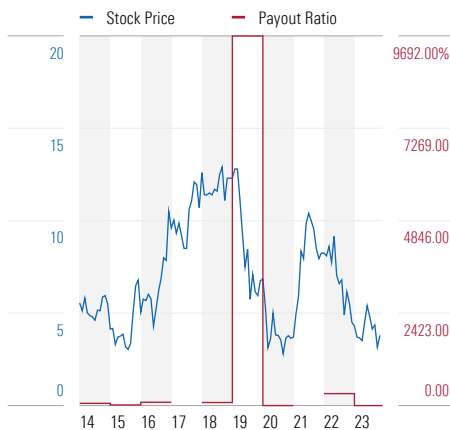
| | | | | | | | | |
|-----------------------------------|---------------------------------|--------------------------------------|---|----------------------------------|-------------------|-------------------------|-----------------|-----------------|
| Economic Moat ^Q | Uncertainty ^Q | Price/Fair Value ^Q | ESG Risk Rating Assessment ¹ | Trailing Dividend Yield % | Market Cap | Investment Style | Sector | Industry |
| Narrow | Extreme | 0.5 |  | 30.02 | 3.0003 Bil | Mid Core | Basic Materials | Chemicals |
| | | | 1 Nov 2023 05:00, UTC | | | | | |

Earnings as of 24 Nov 2023

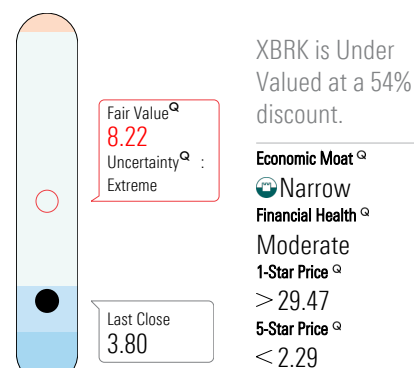
| Earnings | % | ■ Percentile in Sector |
|--------------------|------|------------------------|
| Dividend Yield* | — | — |
| Payout Ratio* | — | — |
| Price to Earnings | — | — |
| Price to Cash Flow | — | — |
| ROIC** | -3.4 | 48.0 |

*—
**30 Sep 2023

Dividends as of 29 Nov 2023



Valuation ^Q as of 29 Nov 2023



Economic Moat ^Q
Narrow
Financial Health ^Q
Moderate
1-Star Price ^Q
> 29.47
5-Star Price ^Q
< 2.29

Financials as of 29 Nov 2023 (Fiscal Year End 31 Dec 2023)

| 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | YTD | Fiscal |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------------------------|
| 41 | 46 | 47 | 48 | 49 | 58 | 52 | 59 | 106 | 97 | 54 | Revenue (Bil) |
| 2.99 | 3.46 | 7.67 | 6.20 | 9.61 | 7.79 | 0.17 | 7.19 | 27.18 | 6.11 | -1.74 | Operating Income (Bil) |
| 7.32 | 7.56 | 16.36 | 13.0 | 19.5 | 13.43 | 0.32 | 12.28 | 25.74 | 6.33 | -3.22 | Operating Margin (%) |
| 0.44 | 0.72 | 3.00 | -0.41 | 3.87 | 2.83 | -2.54 | -6.69 | 13.98 | -0.34 | -3.00 | Net Income (Bil) |
| 0.52 | 0.90 | 3.77 | -0.52 | 4.85 | 3.55 | -3.19 | -8.41 | 17.57 | -0.42 | -3.77 | Diluted Earnings/Share |
| 2.41 | 3.81 | 7.09 | 4.46 | 2.46 | 9.25 | 2.27 | 6.29 | 14.79 | 8.95 | -3.29 | Operating Cash Flow (Bil) |
| -5,682 | -5,409 | -3,338 | -2,587 | -2,273 | -2,706 | -2,683 | -2,760 | -3,421 | -4,848 | -3,297 | Capital Spending (Mil) |
| -3.27 | -1.60 | 3.75 | 1.87 | 0.19 | 6.54 | -0.42 | 3.53 | 11.37 | 4.10 | -6.58 | Free Cash Flow (Bil) |
| 796 | 796 | 796 | 795 | 796 | 796 | 797 | 797 | 797 | 796 | 797 | Avg Shares Outstand(Mil) |

Valuation as of 29 Nov 2023

| 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | Current | Calendar |
|-------|-------|-------|-------|-------|---------------|-------|------|------|-------|---------|-------------------------------|
| 1.10 | 1.05 | 0.99 | 1.07 | 1.37 | 0.88 | 0.79 | 1.00 | 1.04 | 0.56 | 0.46 | Price/Fair Value ^Q |
| 0.42 | 0.31 | 0.50 | 0.59 | 0.69 | 0.78 | 0.44 | 0.35 | 0.51 | 0.19 | 0.22 | Price/Sales |
| 37.39 | 17.42 | 7.84 | 12.49 | 29.19 | 13.923,515.87 | — | — | 4.55 | 10.57 | — | Price/Earnings |
| 7.95 | 4.95 | 3.04 | 4.52 | 12.49 | 4.53 | 10.28 | 5.50 | 4.42 | 1.86 | 3.64 | Price/Cash Flow |
| 2.00 | 1.90 | 10.05 | 5.37 | 4.36 | 6.05 | 3.33 | — | 4.92 | 2.32 | 3.24 | Price/Book |

Operating Performance as of — (Fiscal Year End 31 Dec 2023)

| 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | Q3 | Fiscal (%) |
|------|-------|-------|--------|-------|-------|--------|-------|-------|-------|--------|-------------------------|
| 1.14 | 1.77 | 5.74 | -0.74 | 7.39 | 5.07 | -4.0 | -8.68 | 15.66 | -0.37 | -2.69 | Return on Assets |
| 6.32 | 12.72 | 77.91 | -17.28 | 85.53 | 44.07 | -44.51 | -498 | 493 | -4.42 | -39.46 | Return on Equity |
| 3.94 | 4.7 | 10.42 | 1.65 | 15.58 | 9.47 | -3.14 | -8.93 | 25.68 | 2.79 | -2.55 | Rtn on Invested Capital |

Dividends as of —

| 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | Current | Calendar (%) |
|------|------|------|------|------|------|------|------|------|-------|---------|-------------------------|
| — | 0.61 | 0.61 | 2.51 | 1.26 | 3.77 | 0.84 | — | 7.54 | 1.70 | — | Dividend Per Share |
| — | 3.64 | 2.77 | 6.4 | — | 3.6 | 2.73 | — | — | 26.15 | 30.02 | Trailing Dividend Yield |
| — | — | — | — | — | — | — | — | — | — | — | Buyback Yield |

Appendix

Economic Moat [®]History as of 29 Nov 2023 (No Moat: 0.00-0.70, Narrow Moat: 0.70-0.99, Wide Moat: 0.99-1.00)

| Year | January | February | March | April | May | June | July | August | September | October | November | December |
|------|---------|----------|-------|-------|------|------|------|--------|-----------|---------|----------|----------|
| 2023 | 0.21 | 0.20 | 0.61 | 0.61 | 0.75 | 0.79 | 0.79 | 0.53 | 0.54 | 0.40 | 0.72 | — |
| 2022 | 0.57 | 0.40 | 0.74 | 0.68 | 0.29 | 0.42 | 0.37 | 0.51 | 0.44 | 0.48 | 0.32 | 0.34 |
| 2021 | 0.08 | 0.19 | 0.17 | 0.41 | 0.34 | 0.29 | 0.27 | 0.80 | 0.71 | 0.84 | 0.76 | 0.52 |
| 2020 | 0.86 | 0.70 | 0.57 | 0.53 | 0.41 | 0.45 | 0.36 | 0.05 | 0.20 | 0.26 | 0.10 | 0.15 |
| 2019 | 0.97 | 0.97 | 0.98 | 0.97 | 0.92 | 0.95 | 0.94 | 0.85 | 0.90 | 0.82 | 0.91 | 0.83 |
| 2018 | 0.61 | 0.74 | 0.78 | 0.73 | 0.83 | 0.93 | 0.92 | 0.96 | 0.95 | 0.97 | 0.96 | 0.95 |

Quantitative Equity Report Overview

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Quantitative Equity Ratings

Morningstar's quantitative equity ratings consist of: (i) Quantitative Fair Value Estimate, (ii) Quantitative Star Rating, (iii) Quantitative Uncertainty, (iv) Quantitative Economic Moat, and (v) Quantitative Financial Health (collectively the "Quantitative Ratings").

The Quantitative Ratings are calculated daily and derived from the analyst-driven ratings of a company's peers as determined by statistical algorithms. Morningstar, Inc. ("Morningstar", "we", "our") calculates Quantitative Ratings for companies whether or not it already provides analyst ratings and qualitative coverage. In some cases, the Quantitative Ratings may differ from the analyst ratings because a company's analyst-driven ratings can significantly differ from other companies in its peer group.

i. **Quantitative Fair Value Estimate:** Intended to represent Morningstar's estimate of the per share dollar amount that a company's equity is worth today. Morningstar calculates the Quantitative Fair Value Estimate using a statistical model derived from the Fair Value Estimate Morningstar's equity analysts assign to companies. Please go to <http://global.morningstar.com/equitydisclosures> for information about Fair Value Estimate Morningstar's equity analysts assign to companies.

ii. **Quantitative Economic Moat:** Intended to describe the strength of a firm's competitive position. It is calculated using an algorithm designed to predict the Economic Moat rating a Morningstar analyst would assign to the stock. The rating is expressed as Narrow, Wide, or None.

Narrow – assigned when the probability of a stock receiving a "Wide Moat" rating by an analyst is greater than 70% but less than 99%.

Wide – assigned when the probability of a stock receiving a "Wide Moat" rating by an analyst is greater than 99%.

None – assigned when the probability of an analyst receiving a "Wide Moat" rating by an analyst is less than 70%.

iii. **Quantitative Star Rating:** Intended to be the summary rating based on the combination of our Quantitative Fair Value Estimate, current market price, Quantitative Uncertainty Rating, and momentum. The rating is expressed as One-Star, Two-Star, Three-Star, Four-Star, and Five-Star.

★ – the stock is overvalued with a reasonable margin of safety.

*Log (Quant FVE/Price) < -1*Quantitative Uncertainty*

*Micro-Caps: Log (Quant FVE/Price) < -1.5*Quantitative Uncertainty*

★★ – the stock is somewhat overvalued.

*Log (Quant FVE/Price) between (-1*Quantitative Uncertainty, -0.5*Quantitative Uncertainty)*

*Micro-Caps: Log (Quant FVE/Price) between (-1.5*Quantitative Uncertainty, -0.75*Quantitative Uncertainty)*

★★★ – the stock is approximately fairly valued.

*Log (Quant FVE/Price) between (-0.5*Quantitative Uncertainty, 0.5*Quantitative Uncertainty)*

*Micro-Caps: Log (Quant FVE/Price) between (-0.75*Quantitative Uncertainty, 0.75*Quantitative Uncertainty)*

★★★★ – the stock is somewhat undervalued.

*Log (Quant FVE/Price) between (0.5*Quantitative Uncertainty, 1*Quantitative*

Uncertainty)

*Micro-Caps: Log (Quant FVE/Price) between (0.75*Quantitative Uncertainty, 1.5*Quantitative Uncertainty)*

★★★★★ – the stock is undervalued with a reasonable margin of safety.

*Log (Quant FVE/Price) > 1*Quantitative Uncertainty*

*Micro-Caps: Log (Quant FVE/Price) > 1.5*Quantitative Uncertainty*

After the initial calculation for the star rating, there is a final filtering step based on the momentum of the company. We rank the companies based on their 12-1 month momentum, then restrict those below the 30th percentile to a maximum of 3 stars.

iv. **Quantitative Uncertainty:** Intended to represent Morningstar's level of uncertainty about the accuracy of the Quantitative Fair Value Estimate. Generally, the lower the Quantitative Uncertainty, the narrower the potential range of outcomes for that particular company. The rating is expressed as Low, Medium, High, Very High, and Extreme.

Low – the interquartile range for possible fair values is less than 10%

Medium – the interquartile range for possible fair values is less than 15% but greater than 10%

High – the interquartile range for possible fair values is less than 35% but greater than 15%

Very High – the interquartile range for possible fair values is less than 80% but greater than 35%

Extreme – the interquartile range for possible fair values is greater than 80%

v. **Quantitative Financial Health:** Intended to reflect the probability that a firm will face financial distress in the near future. The calculation uses a predictive model designed to anticipate when a company may default on its financial obligations. The rating is expressed as Weak, Moderate, and Strong.

Weak – assigned when Quantitative Financial Health < 0.2

Moderate – assigned when Quantitative Financial Health is between 0.2 and 0.7

Strong – assigned when Quantitative Financial Health > 0.7

Other Definitions

i. **Last Close** – Price of the stock as of the close of the market of the last trading day before date of the report.

ii. **Quantitative Valuation** – Using the below terms, intended to denote the relationship between the security's **Last Price** and Morningstar's quantitative fair value estimate for that security.

Undervalued – Last Price is below Morningstar's quantitative fair value estimate.

Fairly Valued – Last Price is in line with Morningstar's quantitative fair value estimate.

Fairly Valued – Last Price is in line with Morningstar's quantitative fair value estimate.

Overvalued – Last Price is above Morningstar's quantitative fair value estimate.

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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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