
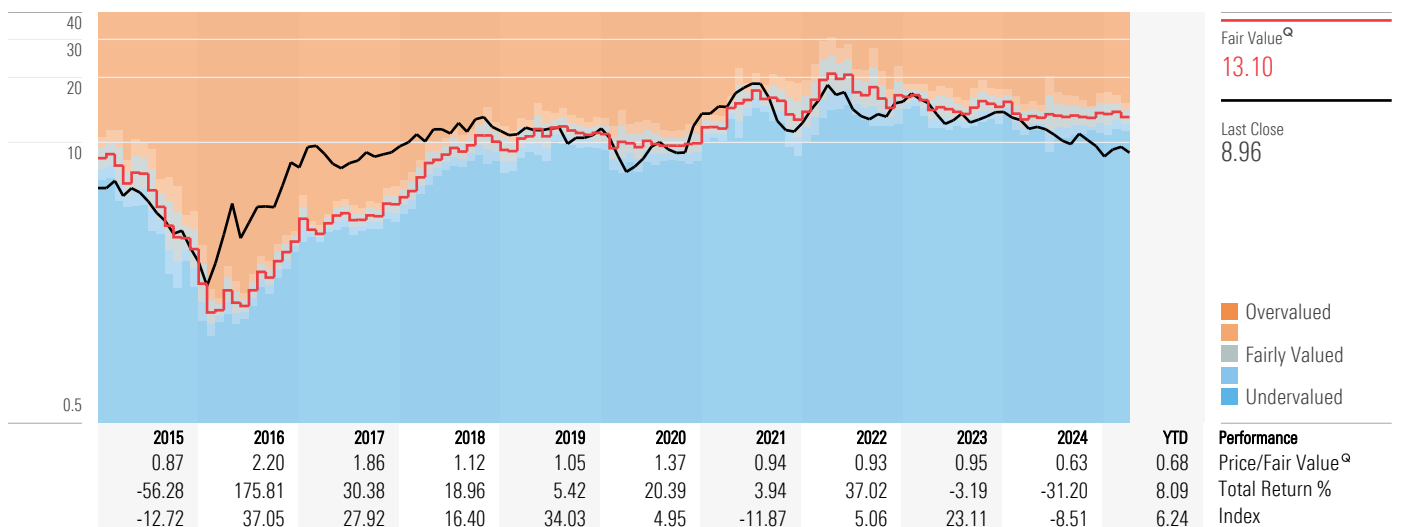


# Vale SA XVALO ★★★

Q MOMENTUM 15 Mar 2025 04:39, UTC

| Economic Moat <sup>Q</sup> | Uncertainty <sup>Q</sup> | Price/Fair Value <sup>Q</sup> | ESG Risk Rating Assessment <sup>1</sup>                                           | Trailing Dividend Yield % | Market Cap | Investment Style | Sector          | Industry                         |
|----------------------------|--------------------------|-------------------------------|-----------------------------------------------------------------------------------|---------------------------|------------|------------------|-----------------|----------------------------------|
| None                       | Medium                   | 0.68                          |  | 14.05                     | —          | Large Value      | Basic Materials | Other Industrial Metals & Mining |



As of 14 Mar 2025 | Index: Morningstar Brazil GR BRL. Fair Value data as of 11 Mar 2025 04:34, UTC.

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

## Business Description

Vale is a large global miner and the world's largest producer of iron ore and pellets. In recent years the company has sold noncore assets such as its fertilizer, coal, and steel operations to concentrate on iron ore, nickel, and copper. Earnings are dominated by the bulk materials division, primarily iron ore and iron ore pellets. The base metals division is much smaller, consisting of nickel mines and smelters along with copper mines producing copper in concentrate. In 2024, Vale sold a minority 10% stake in energy transition metals, its base metals business, likely the first step in separating base metals and iron ore.

The firm's earnings yield of 19.3%, a core component of profitability, sits in the top 10% compared with peers globally. This suggests that it is generating substantial earnings relative to its share price, which further promotes our favorable price/fair value ratio.

## Economic Moat<sup>Q</sup> as of 14 Mar 2025

The company's quantitative economic moat rating of none suggests any excess returns could erode quickly as competition arrives. Additionally, the firm's moderate financial health score suggests it is acceptably positioned against adverse economic circumstances.

## Valuation<sup>Q</sup> as of 14 Mar 2025

While Vale SA may seem inexpensive after its substantial price decline over the past year, we've limited its rating to 3 stars to account for the possibility that it may represent a value trap. The stock currently trades at a 32% discount to our quantitative fair value estimate of 13.10 EUR per share; however, some caution is warranted due to this estimate's medium uncertainty rating.

## Contact

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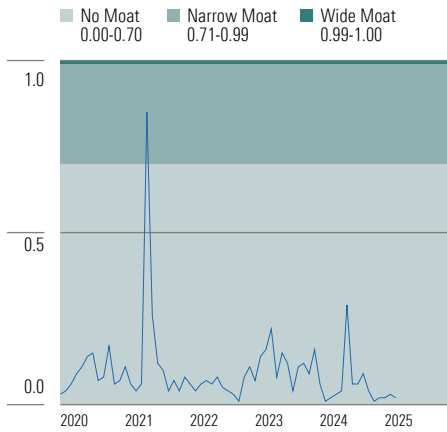
The company's valuation metrics increase our fair value estimate. A company's valuation metrics provide insights into the market's expectations for its future growth and profitability. For example, the firm's enterprise value to EBITDA ratio of 3.8 lies in the bottom 10% compared with peers globally. Relative to the company's EBITDA, the enterprise value of the business is low, which contributes to our view that shares are undervalued.

The company's profitability is an additional encouraging factor. Highly profitable companies are often more resilient in recessions and are likely to generate stronger future cash flows for shareholders.

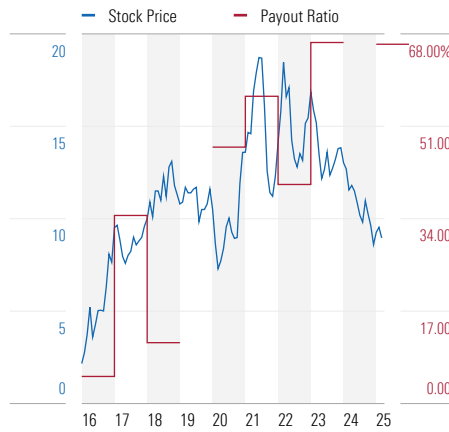
# Vale SA XVALO ★★★ Q MOMENTUM 15 Mar 2025 04:39, UTC

|                                   |                                 |                                      |                                                |                                  |                   |                         |                 |                                  |
|-----------------------------------|---------------------------------|--------------------------------------|------------------------------------------------|----------------------------------|-------------------|-------------------------|-----------------|----------------------------------|
| <b>Economic Moat</b> <sup>Q</sup> | <b>Uncertainty</b> <sup>Q</sup> | <b>Price/Fair Value</b> <sup>Q</sup> | <b>ESG Risk Rating Assessment</b> <sup>1</sup> | <b>Trailing Dividend Yield %</b> | <b>Market Cap</b> | <b>Investment Style</b> | <b>Sector</b>   | <b>Industry</b>                  |
| None                              | Medium                          | 0.68                                 | 5 Mar 2025 06:00, UTC                          | 14.05                            | —                 | Large Value             | Basic Materials | Other Industrial Metals & Mining |

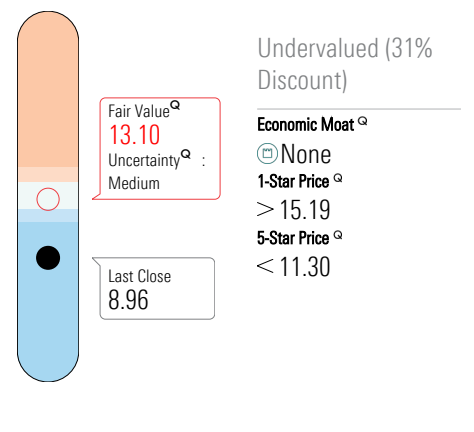
## Economic Moat <sup>Q</sup> History as of 8 Mar 2025



## Dividends as of 14 Mar 2025



## Valuation <sup>Q</sup> as of 11 Mar 2025



## Financials (Fiscal Year End 31 Dec 2024)

|                           | 2015   | 2016  | 2017  | 2018  | 2019  | 2020  | 2021  | 2022  | 2023  | 2024 | 09/2024 | Fiscal                    |
|---------------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|------|---------|---------------------------|
| Revenue (Bil)             | 25.61  | 27.49 | 33.97 | 36.58 | 37.57 | 40.02 | 54.50 | 43.84 | 41.78 | —    | 40.99   | Revenue (Bil)             |
| Operating Income (Bil)    | 2.61   | 8.19  | 11.41 | 13.04 | 14.13 | 18.55 | 30.84 | 17.79 | 15.86 | —    | 14.13   | Operating Income (Bil)    |
| Operating Margin (%)      | 10.20  | 29.79 | 33.59 | 35.65 | 37.62 | 46.35 | 56.59 | 40.57 | 37.95 | —    | 34.47   | Operating Margin (%)      |
| Net Income (Bil)          | -12.13 | 3.98  | 5.51  | 6.86  | -1.68 | 4.88  | 22.45 | 18.79 | 7.98  | —    | 9.28    | Net Income (Bil)          |
| Diluted Earnings/Share    | -2.35  | 0.77  | 1.05  | 1.32  | -0.33 | 0.95  | 4.47  | 4.05  | 1.83  | —    | 2.16    | Diluted Earnings/Share    |
| Operating Cash Flow (Bil) | 4.49   | 6.58  | 12.45 | 12.90 | 12.11 | 14.32 | 25.68 | 11.49 | 13.17 | —    | 11.24   | Operating Cash Flow (Bil) |
| Capital Spending (Bil)    | 8.37   | 4.95  | 3.83  | 3.78  | 3.70  | 4.43  | 5.03  | 5.45  | 5.92  | —    | 6.24    | Capital Spending (Bil)    |
| Free Cash Flow (Bil)      | -5.13  | 2.52  | 7.99  | 10.68 | 8.48  | 13.12 | 20.63 | 7.31  | 8.15  | —    | 6.28    | Free Cash Flow (Bil)      |
| Avg Shares Outstand(Bil)  | 5.15   | 5.15  | 5.20  | 5.13  | 5.13  | 5.13  | 4.89  | 4.48  | 4.34  | —    | 4.34    | Avg Shares Outstand(Bil)  |

## Valuation as of 14 Mar 2025

|                               | 2015 | 2016  | 2017 | 2018  | 2019  | 2020  | 2021 | 2022 | 2023 | 2024 | Current | Calendar                      |
|-------------------------------|------|-------|------|-------|-------|-------|------|------|------|------|---------|-------------------------------|
| Price/Fair Value <sup>Q</sup> | 0.87 | 2.20  | 1.86 | 1.12  | 1.05  | 1.37  | 0.94 | 0.93 | 0.95 | 0.63 | 0.68    | Price/Fair Value <sup>Q</sup> |
| Price/Sales                   | 0.57 | 1.71  | 1.67 | 1.94  | 1.81  | 2.20  | 1.32 | 1.78 | 1.61 | 0.98 | 1.09    | Price/Sales                   |
| Price/Earnings                | —    | —     | 8.02 | 16.00 | 18.43 | 30.41 | 4.20 | 3.84 | 7.03 | 4.32 | 6.73    | Price/Earnings                |
| Price/Cash Flow               | 3.94 | 10.48 | 4.58 | 5.01  | 8.51  | 4.36  | 2.57 | 5.85 | 5.39 | 3.20 | 4.58    | Price/Cash Flow               |
| Price/Book                    | 0.84 | 1.11  | 1.30 | 1.66  | 1.54  | 2.37  | 2.10 | 2.08 | 1.66 | 1.07 | 1.19    | Price/Book                    |

## Operating Performance (Fiscal Year End 31 Dec 2024)

|                         | 2015   | 2016  | 2017  | 2018  | 2019  | 2020  | 2021  | 2022  | 2023  | 2024 | 09/2024 | Fiscal (%)              |
|-------------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|------|---------|-------------------------|
| Return on Assets        | -11.83 | 4.25  | 5.56  | 7.32  | -1.87 | 5.31  | 24.74 | 21.31 | 8.82  | —    | 10.43   | Return on Assets        |
| Return on Equity        | -57.03 | 30.11 | 18.54 | 15.69 | -4.00 | 12.88 | 63.93 | 53.42 | 21.20 | —    | 24.32   | Return on Equity        |
| Rtn on Invested Capital | -23.57 | 11.42 | 12.29 | 12.19 | 0.53  | 11.61 | 44.01 | 36.88 | 16.65 | —    | 19.03   | Rtn on Invested Capital |

## Dividends as of 14 Mar 2025

|                         | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021  | 2022 | 2023 | 2024  | Current | Calendar (%)            |
|-------------------------|------|------|------|------|------|------|-------|------|------|-------|---------|-------------------------|
| Dividend Per Share      | 0.30 | 0.05 | 0.42 | 0.15 | 0.26 | 0.45 | 2.79  | 1.45 | 1.22 | 1.43  | 1.26    | Dividend Per Share      |
| Trailing Dividend Yield | 9.71 | 0.62 | 3.81 | 1.99 | 1.92 | 2.68 | 18.84 | 4.78 | 8.06 | 15.72 | 14.05   | Trailing Dividend Yield |
| Buyback Yield           | —    | —    | —    | —    | 0.75 | 0.00 | 0.00  | 7.25 | 5.51 | 1.15  | 0.99    | Buyback Yield           |

# Appendix

**Economic Moat** <sup>®</sup>History as of 8 Mar 2025 (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 |
|------|---------|----------|-------|-------|------|------|------|--------|-----------|---------|----------|----------|
| 2025 | 0.02    | 0.03     | 0.02  | —     | —    | —    | —    | —      | —         | —       | —        | —        |
| 2024 | 0.06    | 0.01     | 0.02  | 0.03  | 0.04 | 0.29 | 0.06 | 0.06   | 0.09      | 0.04    | 0.01     | 0.02     |
| 2023 | 0.07    | 0.14     | 0.16  | 0.22  | 0.08 | 0.15 | 0.12 | 0.04   | 0.11      | 0.12    | 0.09     | 0.16     |
| 2022 | 0.06    | 0.04     | 0.06  | 0.07  | 0.06 | 0.08 | 0.05 | 0.04   | 0.03      | 0.01    | 0.08     | 0.11     |
| 2021 | 0.11    | 0.06     | 0.04  | 0.06  | 0.85 | 0.26 | 0.12 | 0.10   | 0.04      | 0.07    | 0.04     | 0.08     |
| 2020 | 0.03    | 0.04     | 0.06  | 0.09  | 0.11 | 0.14 | 0.15 | 0.07   | 0.08      | 0.17    | 0.06     | 0.07     |

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The quantitative report on equities consists of data, statistics and quantitative equity ratings on equity securities. Morningstar, Inc.'s quantitative equity ratings are forward looking and are generated by a statistical model that is based on Morningstar Inc.'s analyst-driven equity ratings and quantitative statistics. Given the nature of the quantitative report and the quantitative ratings, there is no one analyst in which a given report is attributed to; however, Jeffrey Ptak, Chief Ratings Officer for Morningstar Research Services LLC is responsible for overseeing the methodology that supports the quantitative equity ratings used in this report. As an employee of Morningstar Research Services LLC, a subsidiary of Morningstar, Inc., Mr Ptak is guided by the Morningstar Research Services' Code of Ethics and the Morningstar, Inc. Code of Ethics and Personal Securities trading Policy in carrying out his responsibilities.

### 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*

**Under Review** – Morningstar will assign a rating of "Under Review" in three scenarios: when there is occurrence of a corporate event, when the closing price is unavailable for at least 7 days, or when the quantitative Fair Value to Price Ratio does not fall into the expected range of 0.25-4.

**Not Rated** – Morningstar will assign a rating of 'Not Rated' when closing price data is unavailable for at least 30 days.

**Momentum Flag** – 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.

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**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.

**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/](https://sustainalytics.com/esg-ratings/)

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