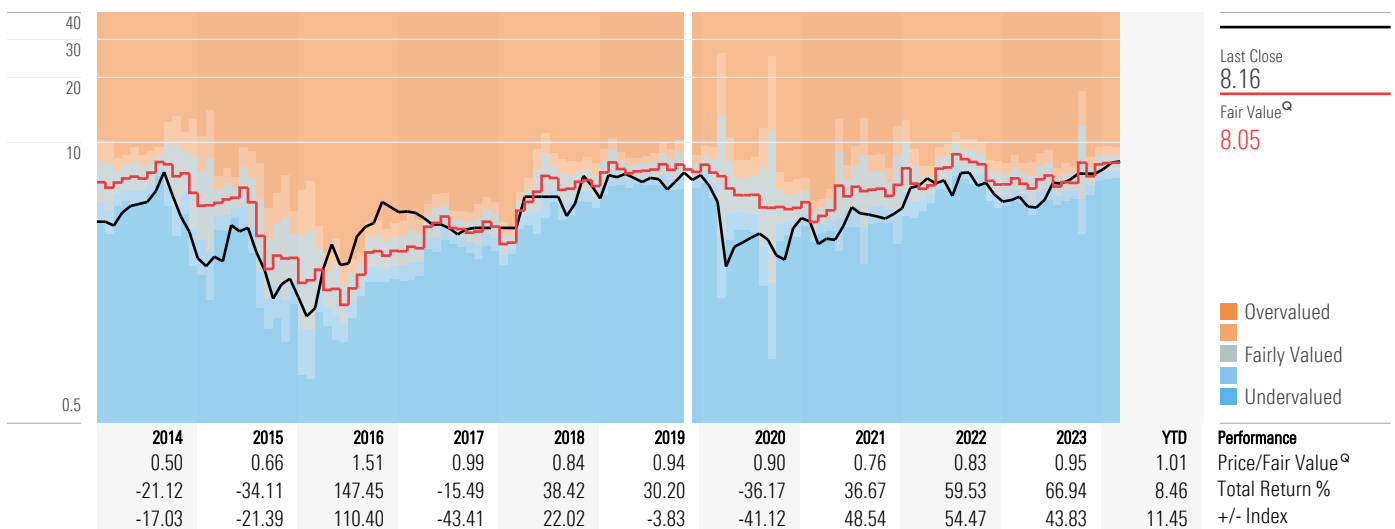


Petroleo Brasileiro SA Petrobras XPBR ★★★ Q 23 Feb 2024, 23:33 UTC

Economic Moat ^Q	Uncertainty ^Q	Price/Fair Value ^Q	ESG Risk Rating Assessment ¹	Trailing Dividend Yield %	Market Cap	Investment Style	Sector	Industry
None	High	1.0	7 Feb 2024 06:00, UTC	16.71	104.2233 Bil	Large Value	Energy	Oil & Gas Integrated



As of 23 Feb 2024 | Index: Morningstar Brazil GR BRL. Fair Value data as of 23 Feb 2024, 23:33 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 22 Feb 2024

Metrics		Percentile in Sector
Earnings Yield (%)	23.4	88.0
Sales Yield (%)	92.0	58.0
Book Value Yield (%)	67.9	43.0
Return on Assets (%)*	14.1	87.0
Revenue(Bil)*	105.5	96.0
Market Value (Bil)	113.1	98.0
Enterprise Value (Bil)	160.7	98.0
EV/MV Ratio	1.4	72.0
Volatility TTM (%)	26.6	34.0
Drawdown TTM (%)	10.5	8.0
Volume (Mil)	19.3	94.0

*30 Sep 2023

Business Description

Petrobras is a Brazil-based integrated energy company controlled by the Brazilian government. The company focuses on exploration and production for oil and gas in Brazilian offshore fields. Production in 2022 was 2.7 million barrels of oil equivalent a day (80% oil production), and reserves stood at 10.5 billion boe (85% oil). At year-end 2022, Petrobras operated 11 refineries in Brazil with capacity of 1.9 million barrels a day and distributes refined products and natural gas throughout Brazil.

Valuation ^Q as of 23 Feb 2024

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

The stock's last closing price was 8.31, in-line with its Quantitative Fair Value estimate of 8.20. The stock has been trading between a 26.97% discount and 12.62% premium to its quantitative fair value over the past year. The stock's price to fair value ratio is at the 91st percentile in our global equity coverage universe for this methodology and at the 95th percentile relative to its peers in the energy sector.

Petrobras Brasileiro furthermore holds a High quantitative uncertainty rating.

The company's quantitative star rating dates to after 10/02/2023, before which it was 2-star. Similarly, the firm's uncertainty rating changed from Medium to High after 01/23/2024.

We examine the financials and market statistics for Petrobras Brasileiro to determine these ratings. Its book value yield is 67.85% and its trailing 12-month average volume (primary share) is 19,300,710 shares. These fall at the 54th and 95th percentiles in the equity universe and at the 43rd and 94th in the energy sector, respectively.

Economic Moat ^Q as of 23 Feb 2024

Morningstar maintains a quantitative moat rating of None on the company. The firm's quantitative moat score of 0.08 sits at the 18th percentile in the energy sector. This is a decrease from 0.6, the maximum of its moat scores over the past year. The quantitative financial health rating for Petrobras Brasileiro is Moderate. Its financial health score, termed Distance to Default, sits at the 37th percentile in the universe and 43rd 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 Petrobras Brasileiro is 67.85%, and its annualized trailing 12-month volatility is 26.56%. They sit at the 54th and 38th percentile in the global equity universe, respectively.

Fundamentals as of 23 Feb 2024

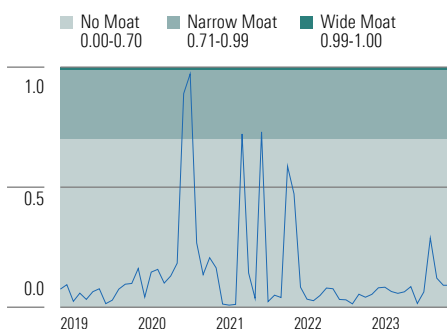
Petrobras Brasileiro maintains earnings per share of 2.06. The company further earns a return on invested capital of 22.19%. The shares offer a dividend yield of 16.89%. These values are calculated over a trailing 12-month period.

As of last market close, Petrobras Brasileiro has a price-to-earnings ratio of 4.36, falling below the 22nd percentile in its sector (where a lower percentile means a lower ratio) and ranging between 1.8 and 4.47 over the past year. The company's price-to-free cash flow ratio is 3.63, falling at the 20th percentile in its sector and ranging between 1.65 and 3.71 over the past year.


Contact

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Economic Moat ^Q History as of 23 Feb 2024



Petroleo Brasileiro SA Petrobras XPBR ★★★ Q 23 Feb 2024, 23:33 UTC

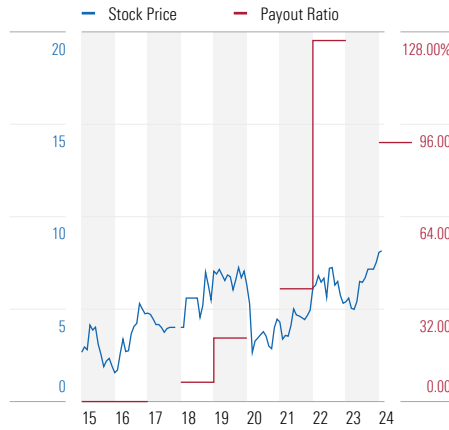
Economic Moat ^Q	Uncertainty ^Q	Price/Fair Value ^Q	ESG Risk Rating Assessment ¹	Trailing Dividend Yield %	Market Cap	Investment Style	Sector	Industry
None	High	1.0	 7 Feb 2024 06:00, UTC	16.71	104.2233 Bil	Large Value	Energy	Oil & Gas Integrated

Earnings as of 22 Feb 2024

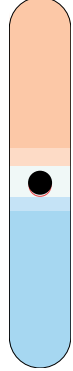
Earnings	%	Percentile in Sector
Dividend Yield*	16.9	93.0
Payout Ratio*	89.7	82.0
Price to Earnings	4.4	22.0
Price to Cash Flow	3.6	20.0
ROIC**	22.2	85.0

*31 Jan 2024
**30 Sep 2023

Dividends as of 23 Feb 2024



Valuation ^Q as of 23 Feb 2024



XPBR is trading within a range we consider fairly valued..

Economic Moat ^Q

⊖ None

Financial Health ^Q

Moderate

1-Star Price ^Q

> 9.53

5-Star Price ^Q

< 6.81

Contact

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

Financials as of 23 Feb 2024 (Fiscal Year End 31 Dec 2023)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	Fiscal
Revenue (Bil)	144	97	81	78	85	77	54	84	124	—	75	Revenue (Bil)
Operating Income (Bil)	14	15	16	11	23	21	18	33	56	—	32	Operating Income (Bil)
Operating Margin (%)	9.95	15.11	19.28	14.33	27.43	27.21	34.0	39.09	44.65	—	41.98	Operating Margin (%)
Net Income (Bil)	-7.37	-8.45	-4.84	-0.09	7.17	10.15	1.14	19.88	36.62	—	18.63	Net Income (Bil)
Diluted Earnings/Share	-0.56	-0.65	-0.37	-0.01	0.55	0.78	0.09	1.52	2.81	—	1.43	Diluted Earnings/Share
Operating Cash Flow (Bil)	27	26	26	27	26	26	29	38	50	—	32	Operating Cash Flow (Bil)
Capital Spending (Bil)	-34.81	-21.65	-14.09	-13.55	-11.91	-23.90	-5.87	-6.33	-9.58	—	-8.52	Capital Spending (Bil)
Free Cash Flow (Bil)	-8.06	4.33	12.03	13.57	14.45	1.70	23.02	31.47	40.14	—	23.02	Free Cash Flow (Bil)
Avg Shares Outstand(Bil)	13	13	13	13	13	13	13	13	13	—	13	Avg Shares Outstand(Bil)

Valuation as of 23 Feb 2024

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Current	Calendar
Price/Fair Value ^Q	0.50	0.66	1.51	0.99	0.84	0.94	0.90	0.76	0.83	0.95	1.01	Price/Fair Value ^Q
Price/Sales	0.33	0.25	0.80	—	0.87	1.15	1.20	0.99	0.62	1.03	1.09	Price/Sales
Price/Earnings	5.25	—	—	—	16.56	15.48	—	2.85	2.17	4.04	4.29	Price/Earnings
Price/Cash Flow	2.16	1.09	2.57	—	3.21	4.11	2.45	2.05	1.61	2.44	2.59	Price/Cash Flow
Price/Book	0.28	0.38	0.82	—	1.13	1.40	1.63	1.08	1.07	1.40	1.48	Price/Book

Operating Performance as of 23 Feb 2024 (Fiscal Year End 31 Dec 2023)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Q3	Fiscal (%)
Return on Assets	-2.38	-3.19	-2.03	-0.04	3.03	4.49	0.54	10.91	20.26	—	2.66	Return on Assets
Return on Equity	-5.56	-9.31	-6.81	-0.12	9.48	14.01	1.72	30.87	52.73	—	7.09	Return on Equity
Rtn on Invested Capital	-2.16	-2.09	-0.2	1.6	5.45	9.16	3.32	17.8	30.57	—	4.46	Rtn on Invested Capital

Dividends as of 23 Feb 2024

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Current	Calendar (%)
Dividend Per Share	1.06	—	—	—	0.25	0.50	0.24	7.26	16.77	7.33	1.36	Dividend Per Share
Trailing Dividend Yield	6.02	—	—	—	1.02	1.73	0.86	23.3	58.84	—	16.71	Trailing Dividend Yield
Buyback Yield	—	—	—	—	—	—	—	—	—	—	—	Buyback Yield

Appendix

Economic Moat [®]History as of 23 Feb 2024 (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
2024	0.09	0.08	—	—	—	—	—	—	—	—	—	—
2023	0.05	0.08	0.08	0.07	0.06	0.06	0.09	0.02	0.06	0.29	0.12	0.09
2022	0.47	0.08	0.03	0.03	0.05	0.08	0.08	0.03	0.03	0.01	0.05	0.04
2021	0.16	0.01	0.01	0.01	0.72	0.14	0.04	0.73	0.02	0.05	0.04	0.59
2020	0.16	0.04	0.15	0.16	0.10	0.13	0.18	0.89	0.97	0.27	0.14	0.21
2019	0.08	0.09	0.02	0.06	0.03	0.06	0.08	0.01	0.03	0.08	0.10	0.10

Quantitative Equity Report Overview

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, Mr. Lee Davidson, Head of Quantitative Research for Morningstar, Inc., is responsible for overseeing the methodology that supports the quantitative equity ratings used in this report. As an employee of Morningstar, Inc., Mr. Davidson is guided by Morningstar, Inc.'s 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*

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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This Report **has not been made available** to the issuer of the security prior to publication.

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