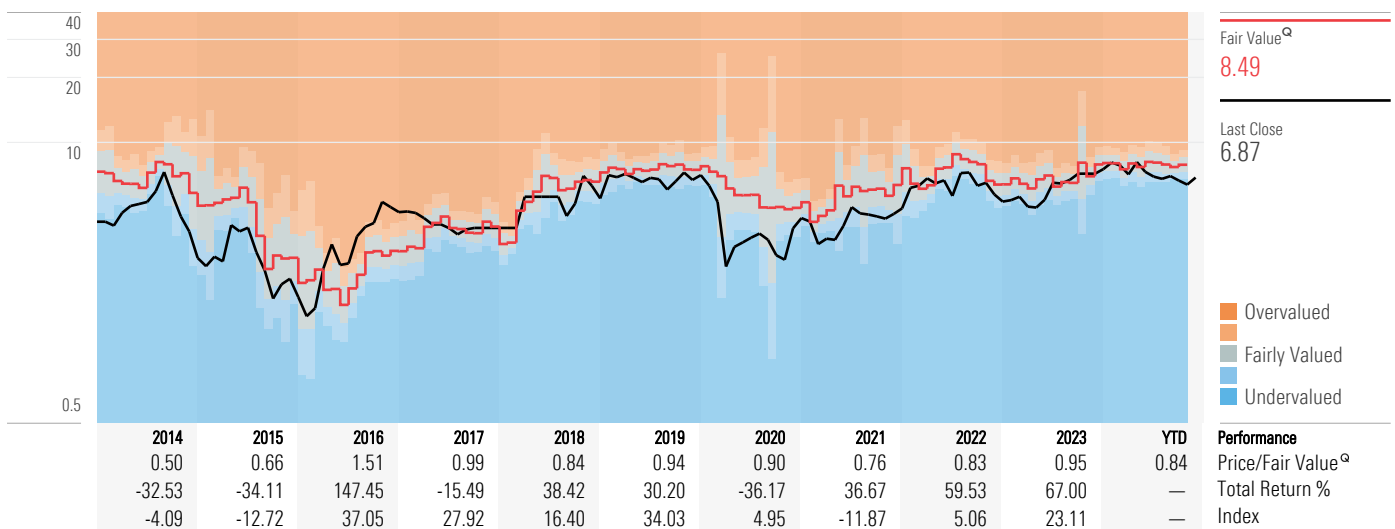


Petroleo Brasileiro SA Petrobras XPBR ★★★★★ Q 4 Dec 2024 06:51, UTC

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	0.81	6 Nov 2024 06:00, UTC	12.35	—	Large Value	Energy	Oil & Gas Integrated



As of — | Index: Morningstar Brazil GR BRL. Fair Value data as of 3 Dec 2024 06:37, UTC.

¹The 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>.

Key Metrics as of 29 Nov 2024

Metrics		Percentile in Sector
Earnings Yield (%)	17.9	88.0
Sales Yield (%)	105.9	63.0
Book Value Yield (%)	78.5	50.0
Return on Assets (%)*	8.2	79.0
Revenue(Bil)*	97.7	96.0
Market Value (Bil)	87.7	97.0
Enterprise Value (Bil)	132.5	97.0
EV/MV Ratio	1.5	74.0
Volatility TTM (%)	25.1	30.0
Drawdown TTM (%)	20.6	25.0
Volume (Mil)	17.4	94.0

*30 Sep 2024

Business Description

Petrobras is a Brazil-based integrated energy company controlled by the Brazilian government. The company focuses on exploration and production of oil and gas in Brazilian offshore fields. Production in 2023 was 2.8 million barrels of oil equivalent a day (80% oil production), and reserves stood at 10.9 billion boe (85% oil). At end-2023, Petrobras operated 10 refineries in Brazil with capacity of 1.8 million barrels a day and distributes refined products and natural gas throughout Brazil.

Valuation ^Q as of 4 Dec 2024

Petroleo Brasileiro SA Petrobras earns a 5-star quantitative star rating, indicating our belief that this share class offers a compelling opportunity for investors. The stock currently trades at a 16% discount to our quantitative fair value estimate of 8.49 EUR per share; however, caution is warranted due to this estimate's high uncertainty rating.

company's equity, which further promotes our favorable price/fair value ratio.

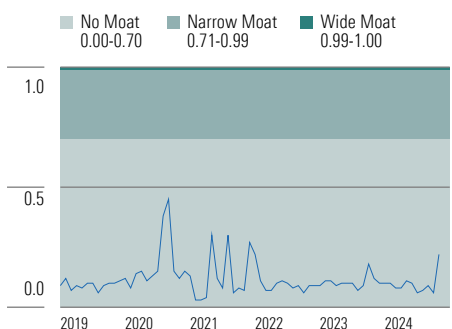
Economic Moat ^Q as of 4 Dec 2024

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.

Contact

Avenida Republica do Chile, 65, Rio de Janeiro, RJ 20031-912
T +55 2132242401
acionistas@petrobras.com.br
<https://www.petrobras.com.br>

Economic Moat ^Q History as of 30 Nov 2024



The company's favorable dividend structure bolsters our estimated valuation. Dividends represent a stable form of future cash flows returned to shareholders, reducing the perceived risk of a business. Reflecting the firm's dividends is its forward dividend yield of 12.9%, which lies in the top 10% globally. Expected dividend payments over the coming year relative to the current share price are favorable, which contributes to our view that shares are undervalued.

The company's valuation metrics are an additional encouraging factor. A company's valuation metrics provide insights into the market's expectations for its future growth and profitability. The firm's book value yield of 78.3%, for example, sits in the top 40% compared with global peers. The market price is low relative to the book (accounting) value of the

Petroleo Brasileiro SA Petrobras XPBR ★★★★★ Q 4 Dec 2024 06:51, UTC

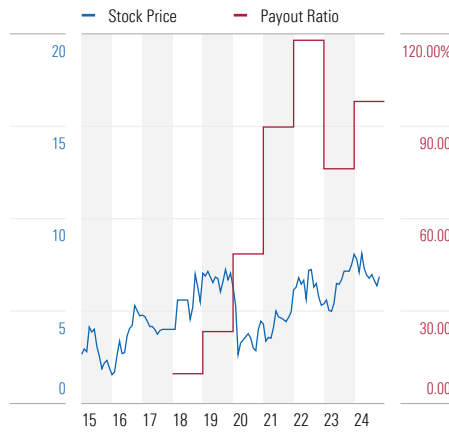
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None	High	0.81	6 Nov 2024 06:00, UTC	12.35	—	Large Value	Energy	Oil & Gas Integrated

Earnings as of 29 Nov 2024

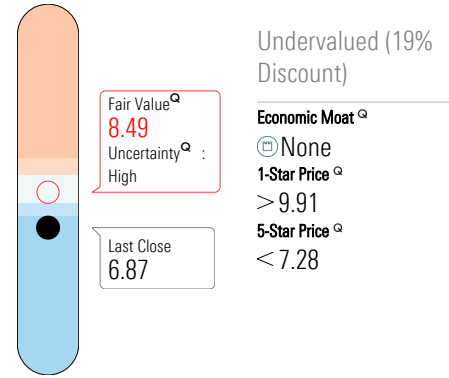
Earnings	%	Percentile in Sector
Dividend Yield*	12.8	90.0
Payout Ratio*	95.9	78.0
Price to Earnings	5.7	21.0
Price to Cash Flow	3.4	16.0
ROIC**	14.4	82.0

*29 Nov 2024
**30 Sep 2024

Dividends as of 3 Dec 2024



Valuation ^Q as of 3 Dec 2024



Financials (Fiscal Year End 31 Dec 2024)

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	09/2024	Fiscal
143.66	97.31	81.41	88.83	95.58	76.59	53.68	83.97	124.47	102.41	97.71	Revenue (Bil)
13.20	14.28	14.46	13.31	23.12	17.18	16.51	33.33	55.53	39.27	32.93	Operating Income (Bil)
9.19	14.67	17.77	14.98	24.19	22.43	30.76	39.69	44.61	38.35	38.35	Operating Margin (%)
-7.37	-8.45	-4.84	-0.09	7.17	10.15	1.14	19.88	36.62	24.88	16.57	Net Income (Bil)
-0.56	-0.65	-0.37	-0.01	0.55	0.78	0.09	1.52	2.81	1.91	1.28	Diluted Earnings/Share
26.63	25.91	26.11	27.11	26.35	25.60	28.89	37.79	49.72	43.21	41.45	Operating Cash Flow (Bil)
34.81	21.65	14.09	13.64	12.02	23.90	5.87	6.33	9.58	12.11	13.81	Capital Spending (Bil)
-7.55	0.16	6.70	8.64	10.97	3.30	17.43	29.80	44.83	32.89	29.36	Free Cash Flow (Bil)
13.04	13.04	13.04	13.04	13.04	13.04	13.04	13.04	13.04	12.94	12.91	Avg Shares Outstand(Bil)

Valuation as of 3 Dec 2024

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Current	Calendar
0.50	0.66	1.51	0.99	0.84	0.94	0.90	0.76	0.83	0.95	0.84	Price/Fair Value ^Q
0.37	0.27	0.84	0.67	0.90	1.28	1.09	1.04	0.63	0.99	1.02	Price/Sales
5.90	—	—	24.61	17.22	16.57	—	3.00	2.20	3.90	6.04	Price/Earnings
2.28	1.26	3.31	2.63	3.47	4.61	2.47	2.22	1.85	1.94	2.32	Price/Cash Flow
0.32	0.39	0.87	0.74	1.15	1.37	1.56	1.10	0.99	1.34	1.42	Price/Book

Operating Performance (Fiscal Year End 31 Dec 2024)

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	09/2024	Fiscal (%)
-2.38	-3.19	-2.03	-0.04	3.03	4.49	0.54	10.91	20.26	12.31	8.23	Return on Assets
-5.56	-9.31	-6.81	-0.12	9.48	14.01	1.72	30.87	52.73	33.61	22.19	Return on Equity
-2.16	-2.09	-0.20	1.60	5.45	9.16	3.32	17.80	30.57	20.75	14.36	Rtn on Invested Capital

Dividends as of 3 Dec 2024

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Current	Calendar (%)
0.23	—	—	—	0.05	0.14	0.04	1.36	3.31	1.46	0.88	Dividend Per Share
6.02	0.00	0.00	0.00	1.02	7.83	0.86	23.30	58.84	18.16	12.35	Trailing Dividend Yield
—	—	—	—	—	—	—	—	—	—	1.23	Buyback Yield

Appendix

Economic Moat [®]History as of 30 Nov 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	0.10	0.10	0.08	0.08	0.11	0.10	0.06	0.07	0.09	0.06	0.22	—
2023	0.09	0.11	0.11	0.09	0.10	0.10	0.10	0.07	0.09	0.18	0.12	0.10
2022	0.22	0.11	0.07	0.07	0.10	0.11	0.10	0.08	0.09	0.06	0.09	0.09
2021	0.13	0.03	0.03	0.04	0.30	0.12	0.08	0.30	0.06	0.08	0.07	0.27
2020	0.12	0.08	0.14	0.15	0.11	0.13	0.15	0.38	0.45	0.15	0.12	0.15
2019	0.09	0.12	0.07	0.09	0.08	0.10	0.10	0.06	0.09	0.10	0.10	0.11

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, 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.

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.

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

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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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