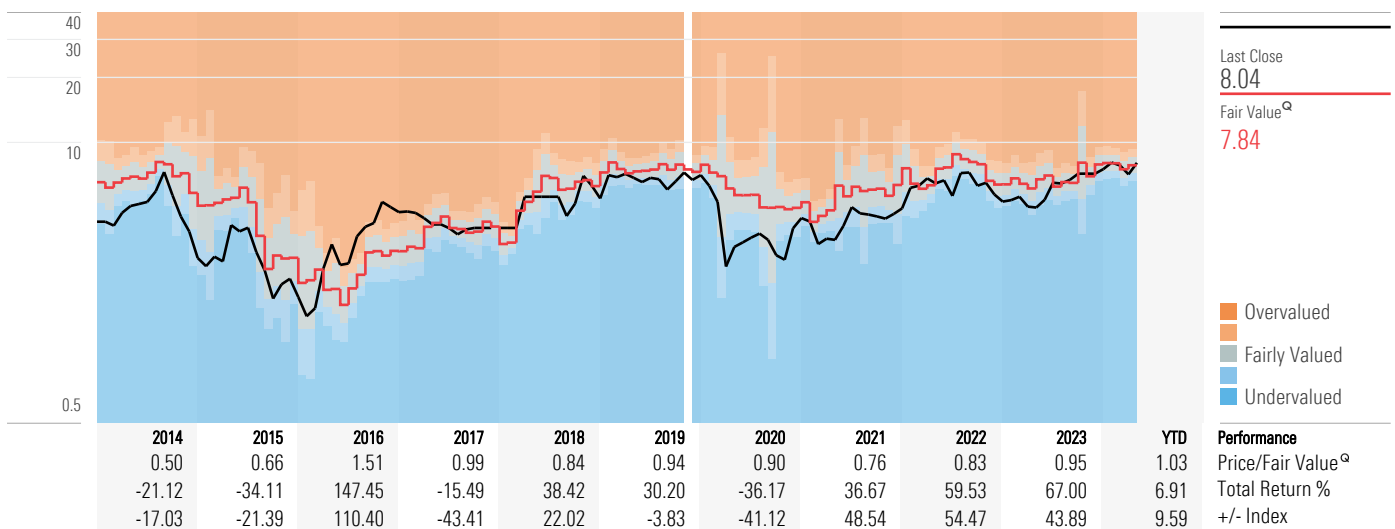


# Petroleo Brasileiro SA Petrobras XPBR ★★★ Q 22 Apr 2024, 22:35 UTC

|                                   |                                 |                                      |  |                                  |                   |                         |               |                      |
|-----------------------------------|---------------------------------|--------------------------------------|--|----------------------------------|-------------------|-------------------------|---------------|----------------------|
| <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                              | High                            | 1.0                                  | 3 Apr 2024 05:00, UTC                          | 16.99                            | 96.6487 Bil       | Large Value             | Energy        | Oil & Gas Integrated |



As of 22 Apr 2024 | Index: Morningstar Brazil GR BRL. Fair Value data as of 22 Apr 2024, 22:35 UTC.

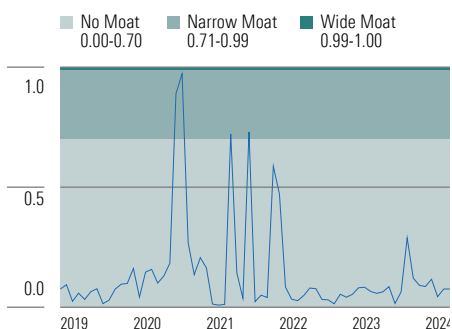
<sup>1</sup>The ESG Risk Rating Assessment is a representation of Sustainalytics' ESG Risk Rating. Lee Davidson, Chief Analytics Officer for Morningstar, Inc, oversees the methodology that supports Quantitative Fair Value Estimates and Quantitative Star Ratings. Mr. Davidson is guided by the Morningstar, 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 18 Apr 2024

| Metrics                |       | Percentile in Sector |
|------------------------|-------|----------------------|
| Earnings Yield (%)     | 22.5  | 90.0                 |
| Sales Yield (%)        | 92.6  | 60.0                 |
| Book Value Yield (%)   | 71.7  | 49.0                 |
| Return on Assets (%)*  | 11.8  | 83.0                 |
| Revenue(Bil)*          | 94.7  | 96.0                 |
| Market Value (Bil)     | 100.0 | 96.0                 |
| Enterprise Value (Bil) | 143.6 | 98.0                 |
| EV/MV Ratio            | 1.4   | 73.0                 |
| Volatility TTM (%)     | 26.8  | 37.0                 |
| Drawdown TTM (%)       | 17.9  | 27.0                 |
| Volume (Mil)           | 19.6  | 94.0                 |

\*31 Dec 2023

## Economic Moat <sup>Q</sup> History as of 22 Apr 2024



## 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 <sup>Q</sup> as of 20 Apr 2024

Petrobras Brasileiro achieves a 3-star quantitative star rating based on Morningstar's equity model. This reflects the company's valuation and uncertainty scores under this assessment system. The Quantitative Fair Value estimate is 7.47, in-line with the previous closing price of 7.80. The stock has been trading between a 24.1% discount and 12.62% premium to its quantitative fair value over the past year. The stock's current valuation rating sits at the 94th percentile in the coverage universe and 94th percentile in the energy sector (higher percentile indicates more undervalued). The quantitative uncertainty rating for Petrobras Brasileiro is High. Our quantitative star rating last differed from the current rating on 10/02/2023; the uncertainty rating last differed on 02/28/2024. The previous ratings were 2 and Very High, respectively. The main drivers of the company's valuation and uncertainty are its book value yield and volume. The book value yield of 68.52% falls at the 55th percentile in the equity universe and the 47th percentile in its sector. The trailing 12-month average volume (primary share) of 19,606,332 shares corresponds to the 95th percentile overall and the 94th percentile in the industry.


## Economic Moat <sup>Q</sup> as of 22 Apr 2024

Quantitatively, we do not believe Petrobras Brasileiro has an economic moat. Its moat score of 0.07 corresponds to the 12th percentile in the energy sector. Furthermore, this rating has not changed over the past year, while the company's moat score fell from its maximum of 0.6 in this period (score of 1 indicates greatest economic moat). The company also maintains a quantitative financial health rating of Moderate. Its score sits at the 35th percentile overall and the 39th percentile in the sector. Examining the company's financials and market statistics, we find these ratings are principally driven by its book value yield and annualized trailing 12-month volatility. The book value yield is 68.52%, sitting at the 47th percentile in the energy sector. The company's annualized trailing 12-month volatility is 27.29%, corresponding to the 40th percentile in the equity coverage universe and the 39th percentile in the sector.

## Fundamentals as of 20 Apr 2024

Petrobras Brasileiro reports earnings per share of 9.27. Its return on invested capital is 19.92%. The company maintains a dividend yield of 19.21%, paying out 76.74% of earnings. These values are calculated over a trailing 12-month period. As of last market close, Petrobras Brasileiro has a price-to-earnings ratio of 4.69, falling at the 19th percentile in its sector (where a lower percentile means a lower ratio) and ranging between 1.75 and 4.69 over the past year. The company's price-to-free cash flow ratio is 3.75, falling at the 15th percentile in its sector and ranging between 1.6 and 3.75 over the past year.

# Petroleo Brasileiro SA Petrobras XPBR ★★★ Q 22 Apr 2024, 22:35 UTC

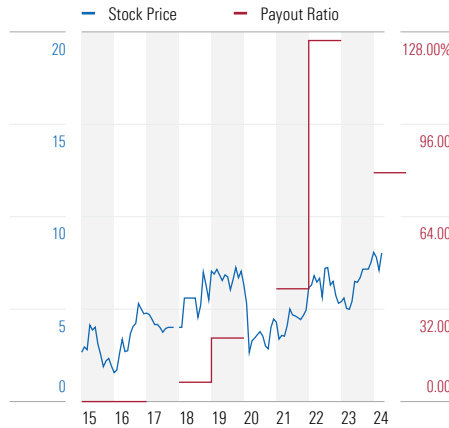
|                                   |                                 |                                      |  |                                  |                   |                         |               |                      |
|-----------------------------------|---------------------------------|--------------------------------------|--|----------------------------------|-------------------|-------------------------|---------------|----------------------|
| <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                              | High                            | 1.0                                  | <br>3 Apr 2024 05:00, UTC | 16.99                            | 96.6487 Bil       | Large Value             | Energy        | Oil & Gas Integrated |

## Earnings as of 18 Apr 2024

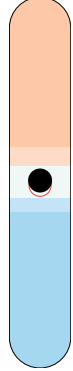
| Earnings           | %    | Percentile in Sector |
|--------------------|------|----------------------|
| Dividend Yield*    | 19.2 | 95.0                 |
| Payout Ratio*      | 76.7 | 78.0                 |
| Price to Earnings  | 4.6  | 18.0                 |
| Price to Cash Flow | 3.7  | 15.0                 |
| ROIC**             | 19.9 | 85.0                 |

\*28 Mar 2024  
\*\*31 Dec 2023

## Dividends as of 22 Apr 2024



## Valuation <sup>Q</sup> as of 22 Apr 2024



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

**Economic Moat** <sup>Q</sup>

⊖ None

**Financial Health** <sup>Q</sup>

Moderate

**1-Star Price** <sup>Q</sup>

> 9.31

**5-Star Price** <sup>Q</sup>

< 6.59

## Contact

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

## Financials as of 22 Apr 2024 (Fiscal Year End 31 Dec 2024)

| 2014   | 2015   | 2016   | 2017  | 2018  | 2019  | 2020   | 2021   | 2022   | 2023   | YTD    | Fiscal                    |
|--------|--------|--------|-------|-------|-------|--------|--------|--------|--------|--------|---------------------------|
| 382    | 386    | 265    | 258   | 328   | 308   | 279    | 468    | 658    | 497    | 497    | Revenue (Bil)             |
| 38     | 58     | 51     | 37    | 88    | 84    | 95     | 170    | 281    | 190    | 190    | Operating Income (Bil)    |
| 9.95   | 15.11  | 19.28  | 14.33 | 26.91 | 27.15 | 33.98  | 36.3   | 42.72  | 38.15  | 38.15  | Operating Margin (%)      |
| -19.61 | -33.47 | -15.75 | -0.30 | 27.80 | 40.85 | 5.93   | 110.77 | 193.66 | 120.77 | 120.77 | Net Income (Bil)          |
| -1.49  | -2.57  | -1.20  | -0.03 | 2.13  | 3.14  | 0.47   | 8.47   | 14.86  | 9.27   | 9.27   | Diluted Earnings/Share    |
| 71     | 103    | 85     | 90    | 102   | 103   | 150    | 211    | 263    | 210    | 210    | Operating Cash Flow (Bil) |
| -93    | -86    | -46    | -45   | -46   | -96   | -31    | -35    | -51    | -59    | -59    | Capital Spending (Bil)    |
| -21.46 | 17.17  | 39.17  | 44.96 | 55.99 | 6.85  | 119.66 | 175.37 | 212.23 | 150.92 | 150.92 | Free Cash Flow (Bil)      |
| 13     | 13     | 13     | 13    | 13    | 13    | 13     | 13     | 13     | 13     | 13     | Avg Shares Outstand(Bil)  |

## Valuation as of 22 Apr 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 | 1.03    | Price/Fair Value <sup>Q</sup> |
| 0.37 | 0.26 | 0.77 | —    | 0.85  | 1.18  | 1.26 | 1.10 | 0.60 | 1.00 | 1.18    | Price/Sales                   |
| 5.82 | —    | —    | —    | 14.77 | 15.75 | —    | 2.96 | 2.09 | 3.91 | 4.85    | Price/Earnings                |
| 2.38 | 1.10 | 2.49 | —    | 3.13  | 4.19  | 2.48 | 2.29 | 1.53 | 2.40 | 2.79    | Price/Cash Flow               |
| 0.34 | 0.37 | 0.82 | —    | 1.08  | 1.36  | 1.50 | 1.14 | 1.05 | 1.35 | 1.52    | Price/Book                    |

## Operating Performance as of 22 Apr 2024 (Fiscal Year End 31 Dec 2024)

| 2014  | 2015   | 2016  | 2017  | 2018  | 2019  | 2020 | 2021  | 2022  | 2023  | Q3   | Fiscal (%)              |
|-------|--------|-------|-------|-------|-------|------|-------|-------|-------|------|-------------------------|
| -2.52 | -3.92  | -1.83 | -0.04 | 3.28  | 4.58  | 0.62 | 11.31 | 19.75 | 11.82 | 2.59 | Return on Assets        |
| -5.93 | -11.79 | -6.2  | -0.12 | 10.26 | 14.28 | 1.97 | 31.86 | 51.35 | 32.25 | 7.01 | Return on Equity        |
| -2.52 | -2.56  | -0.57 | 1.62  | 5.92  | 9.33  | 3.78 | 18.43 | 29.75 | 19.92 | 4.36 | Rtn on Invested Capital |

## Dividends as of 22 Apr 2024

| 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022  | 2023 | Current | Calendar (%)            |
|------|------|------|------|------|------|------|------|-------|------|---------|-------------------------|
| 1.06 | —    | —    | —    | 0.25 | 0.50 | 0.24 | 7.26 | 16.77 | 7.34 | 1.03    | Dividend Per Share      |
| 6.02 | —    | —    | —    | 1.02 | 1.73 | 0.86 | 23.3 | 58.84 | —    | 16.99   | Trailing Dividend Yield |
| —    | —    | —    | —    | —    | —    | —    | —    | —     | —    | 0.66    | Buyback Yield           |

# Appendix

**Economic Moat** <sup>®</sup>History as of 22 Apr 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    | 0.12     | 0.04  | 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.

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

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