

MACRO FUNDAMENTALS

3/24/23

S&P 500 & Sectors: Price-to-Economic Book Value Ratio Rises as Prices Jump in 4Q22 (Free, Abridged)

The trailing-twelve-months (TTM) PEBV ratio for the S&P 500 rose from 1.5 as of 12/30/22 to 1.6 as of 3/8/23.

This report is a free, abridged version of <u>S&P 500 & Sectors: Price-to-Economic Book Value Ratio Rises as Prices Jump in 4Q22</u>, one of our quarterly series on <u>fundamental market and sector trends</u>. The full reports are available to our <u>Professional</u> and <u>Institutional members</u> or can be purchased below.

The full version of this report analyzes^{1,2} the trailing price-to-economic book value (<u>PEBV</u>) ratio for the S&P 500 and its sectors based on financial filings through the second quarter of 2022 (last quarter's analysis is <u>here</u>).

This report leverages our cutting-edge <u>Robo-Analyst technology</u> to deliver <u>proven-superior</u>³ fundamental research and support more cost-effective fulfillment of the fiduciary duty of care.

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S&P 500 Trailing PEBV Rises From Last Quarter

The trailing PEBV ratio compares the S&P 500's expected future profits (as reflected in its price) to its economic book value as of 3/8/23. The S&P 500's PEBV ratio of 1.6 implies the profits (NOPAT) of the S&P 500 will increase 60% from the TTM ended 4Q22 level.

See Figure 1 in the <u>full version</u> of our report for the chart of the PEBV ratio for the S&P 500 from December 2004 through 3/8/23.

Key Details on Select S&P 500 Sectors

Two S&P 500 sectors, Energy and Telecom Services, trade below their economic book value. The Energy sector has the lowest trailing PEBV ratio among all eleven S&P 500 sectors based on prices as of 3/8/23 and financial data from 2022 10-Ks.

A trailing PEBV ratio of 0.6 means the market expects the Energy sector's profits to decline by 40% from 2022 levels. On the flip side, investors expect the Real Estate and Utilities sectors (trailing PEBV ratios of 6.6 and 5.4) to improve profits more than any other S&P 500 sectors.

Below, we highlight the Healthcare sector.

¹ We calculate these metrics based on <u>S&P Global</u>'s (SPGI) methodology, which sums the individual S&P 500 constituent values for market cap and economic book value before using them to calculate the metrics. We call this the "Aggregate" methodology.

² Analysis in this report is based on the latest audited financial data available, or 2022 10-Ks in most cases. Price data for the current period is as of 3/8/23.

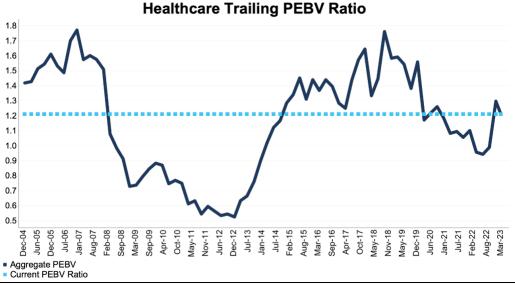
³ Our research utilizes our <u>Core Earnings</u>, a more reliable measure of profits, as proven in <u>Core Earnings: New Data & Evidence</u>, written by professors at Harvard Business School (HBS) & MIT Sloan and published in The Journal of Financial Economics.



Sample Sector Analysis⁴: Healthcare: Trailing PEBV Ratio = 1.2

Figure 1 shows the trailing PEBV ratio for the Healthcare sector fell from 1.3 as of 12/30/22 to 1.2 as of 3/8/23. The Healthcare sector market cap fell from \$5.1 trillion as of 12/30/22 to \$4.7 trillion as of 3/8/23, while its economic book value remained flat at \$3.9 trillion as of 3/8/23.

Figure 1: Healthcare Trailing PEBV Ratio: December 2004 - 3/8/23

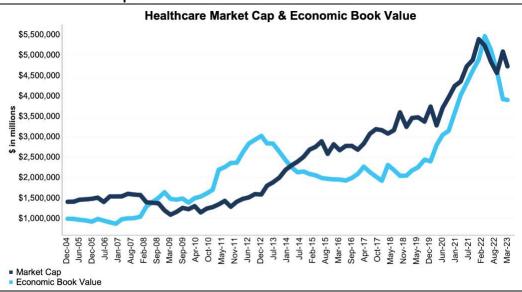


Sources: New Constructs, LLC and company filings.

The March 8, 2023 measurement period uses price data as of that date and incorporates the financial data from 2022 10-Ks, as this is the earliest date for which all the calendar 2022 10-Ks for the S&P 500 constituents were available.

Figure 2 compares the trends for market cap and economic book value for the Healthcare sector since 2004. We sum the individual S&P 500/sector constituent values for market cap and economic book value. We call this approach the "Aggregate" methodology, and it matches S&P Global's (SPGI) methodology for these calculations.

Figure 2: Healthcare Market Cap & Economic Book Value: December 2004 – 3/8/23



Sources: New Constructs, LLC and company filings.

The March 8, 2023 measurement period uses price data as of that date and incorporates the financial data from 2022 10-Ks, as this is the earliest date for which all the calendar 2022 10-Ks for the S&P 500 constituents were available.

⁴ The full version of this report provides analysis for every sector like what we show for this sector.

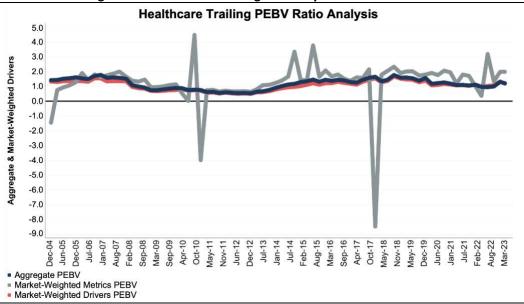


The Aggregate methodology provides a straightforward look at the entire S&P 500/sector, regardless of firm size or index weighting, and matches how S&P Global (SPGI) calculates metrics for the S&P 500.

For additional perspective, we compare the Aggregate method for trailing PEBV ratio with two other market-weighted methodologies: market-weighted metrics and market-weighted drivers. Each method has its pros and cons, which are detailed in the Appendix.

Figure 3 compares these three methods for calculating the Healthcare sector trailing PEBV ratio.

Figure 3: Healthcare Trailing PEBV Ratio Methodologies Compared: December 2004 – 3/8/23



Sources: New Constructs, LLC and company filings.

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Disclosure: David Trainer, Kyle Guske II, and Italo Mendonça receive no compensation to write about any specific stock, style, or theme.

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Appendix: Analyzing Trailing PEBV Ratio with Different Weighting Methodologies

We derive the metrics above by summing the individual S&P 500/sector constituent values for market cap and economic book value to calculate trailing PEBV ratio. We call this approach the "Aggregate" methodology.

The Aggregate methodology provides a straightforward look at the entire S&P 500/sector, regardless of firm size or index weighting, and matches how S&P Global (SPGI) calculates metrics for the S&P 500.

For additional perspective, we compare the Aggregate method for trailing PEBV ratio with two other market-weighted methodologies. These market-weighted methodologies add more value for ratios that do not include market values, e.g. ROIC and its drivers, but we include them here, nonetheless, for comparison:

- Market-weighted metrics calculated by market-cap-weighting the trailing PEBV ratio for the individual companies relative to their sector or the overall S&P 500 in each period. Details:
 - Company weight equals the company's market cap divided by the market cap of the S&P 500 or its sector
 - b. We multiply each company's trailing PEBV ratio by its weight
 - S&P 500/Sector trailing PEBV equals the sum of the weighted trailing PEBV ratios for all the companies in the S&P 500/sector
- 2. **Market-weighted drivers** calculated by market-cap-weighting the market cap and economic book value for the individual companies in each sector in each period. Details:
 - Company weight equals the company's market cap divided by the market cap of the S&P 500 or its sector
 - b. We multiply each company's market cap and economic book value by its weight
 - c. We sum the weighted market cap and weighted economic book value for each company in the S&P 500/each sector to determine the S&P 500 or sector's weighted FCF and weighted enterprise value
 - d. S&P 500/Sector trailing PEBV ratio equals weighted S&P 500/sector market cap divided by weighted S&P 500/sector economic book value

Each methodology has its pros and cons, as outlined below:

Aggregate method

Pros:

- A straightforward look at the entire S&P 500/sector, regardless of company size or weighting.
- Matches how S&P Global calculates metrics for the S&P 500.

Cons:

 Vulnerable to impact of companies entering/exiting the group of companies, which could unduly affect aggregate values. Also susceptible to outliers in any one period.

Market-weighted metrics method

Pros:

Accounts for a firm's market cap relative to the S&P 500/sector and weights its metrics accordingly.

Cons:

 Vulnerable to outlier results from a single company disproportionately impacting the overall trailing PEBV ratio, as we'll show below.

Market-weighted drivers method

Pros:

- Accounts for a firm's market cap relative to the S&P 500/sector and weights its size and economic book value accordingly.
- Mitigates the disproportionate impact of outlier results from one company on the overall results.

Cons:



 More susceptible to large swings in market cap or economic book value (which can be impacted by changes in WACC) period over period, particularly from firms with a large weighting in the S&P 500/Sector.



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Forthcoming in <u>The Journal of Financial Economics</u>, a top peer-reviewed journal, <u>Core Earnings: New Data & Evidence</u> proves our Robo-Analyst technology overcomes material shortcomings in legacy firms' data collection processes to provide superior <u>fundamental data</u>, <u>earnings</u> models, and <u>research</u>. More <u>details</u>.

Key quotes from the paper:

- "[New Constructs'] *Total Adjustments* differs significantly from the items identified and excluded from Compustat's adjusted earnings measures. For example... 50% to 70% of the variation in *Total Adjustments* is not explained by *S&P Global's (SPGI) Adjustments* individually." pp. 14, 1st para.
- "A final source of differences [between New Constructs' and S&P Global's data] is due to data collection oversights...we identified cases where Compustat did not collect information relating to firms' income that is useful in assessing core earnings." pp. 16, 2nd para.

Superior Models

A top accounting firm features the superiority of our ROIC, NOPAT and Invested Capital research to Capital IQ & Bloomberg's in Getting ROIC Right. See the Appendix for direct comparison details.

Key quotes from the paper:

- "...an accurate calculation of ROIC requires more diligence than often occurs in some of the common, off-the-shelf ROIC calculations. Only by scouring the footnotes and the MD&A [as New Constructs does] can investors get an accurate calculation of ROIC." pp. 8, 5th para.
- "The majority of the difference...comes from New Constructs' machine learning approach, which leverages technology to calculate ROIC by applying accounting adjustments that may be buried deeply in the footnotes across thousands of companies." pp. 4, 2nd para.

Superior Stock Ratings

Robo-Analysts' stock ratings outperform those from human analysts as shown in this <u>paper</u> from Indiana's Kelley School of Business. Bloomberg features the paper <u>here</u>.

Key quotes from the paper:

- "the portfolios formed following the buy recommendations of Robo-Analysts earn abnormal returns that are statistically and economically significant." pp. 6, 3rd para.
- "Our results ultimately suggest that Robo-Analysts are a valuable, alternative information intermediary to traditional sell-side analysts." pp. 20, 3rd para.

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