



S&P 500 & Sectors: ROIC Begins Decline in 3Q22 (Free, Abridged)

Trailing-twelve-month (TTM) return on invested capital (ROIC) for the S&P 500 fell quarter-over-quarter (QoQ) in 3Q22 for the first time in the last seven quarters. Six out of eleven S&P 500 sectors saw a QoQ decline in ROIC in 3Q22. This decline comes from deteriorating net operating profit after-tax (NOPAT) margins across the S&P 500.

This report is a free and abridged version of [S&P 500 & Sectors: ROIC Begins to Decline in 3Q22](#), one of our quarterly reports on [fundamental market and sector trends](#). The full report is available to our new Professional (previously known as [Unlimited](#)) and Institutional members.

The full version of this report analyzes the drivers^{1,2} of [economic earnings](#) [ROIC, NOPAT margin, invested capital turns, and weighted average cost of capital (WACC)] for the S&P 500 and each of its sectors (last quarter's analysis is [here](#)).

This report leverages our cutting-edge [Robo-Analyst technology](#) to deliver [proven-superior](#)³ fundamental research and support more cost-effective fulfillment of the [fiduciary duty of care](#).

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S&P 500 ROIC Falls in 3Q22

The S&P 500's ROIC fell from 10.2% in 2Q22 to 10.1% in 3Q22. The S&P 500's NOPAT margin fell from 13.1% in 2Q22 to 12.8% in 3Q22, while invested capital turns rose from 0.78 in 2Q22 to 0.79 in 3Q22.

Two key observations:

[Last quarter](#), we noted the “record” return on capital was a mirage and that the bullish trend in ROIC could reverse soon. That reversal began in 3Q22. Inflation previously lifted margins as profits were calculated using current prices for revenue but historic prices for inventory. As inventory the rise in costs began to outpace the rise in prices charged, margins fell.

WACC for the S&P 500 has now increased QoQ for six consecutive quarters and could continue moving higher as the Federal Reserve is expected to increase rates further in 2023. The rising cost of capital threatens the viability of many weaker companies, several of which we've highlighted in our [Zombie Stocks](#) reports.

See Figure 1 in the [full version](#) of our report for the chart of ROIC and WACC for the S&P 500 from December 2004 through 11/25/22.

Key Details on Select S&P 500 Sectors

Six sectors saw a quarter-over-quarter (QoQ) decline in ROIC.

The Energy sector performed best in the third quarter of 2022 as measured by change in ROIC, with its ROIC rising 159 basis points from 2Q22. In the first half of 2022, energy companies benefited from high energy prices and strong economic activity, which boosted profits across the sector. This trend continued in 3Q22.

The biggest loser in the third quarter was the Technology sector, which had been among the biggest winners of the COVID-era market. ROIC for the Technology sector declined 151 basis points QoQ in 3Q22.

Below, we highlight the Energy sector, which had the largest improvement in ROIC in 3Q22.

¹ Calculated using SPGI's methodology, which sums individual S&P 500 constituent values for NOPAT and invested capital. See Appendix III for more details on this “Aggregate” method and Appendix I for details on how we calculate WACC for the S&P 500 and each of its sectors.

² This report is based on the latest audited financial data available, which is the 3Q22 10-Q in most cases. Price data is as of 11/25/22.

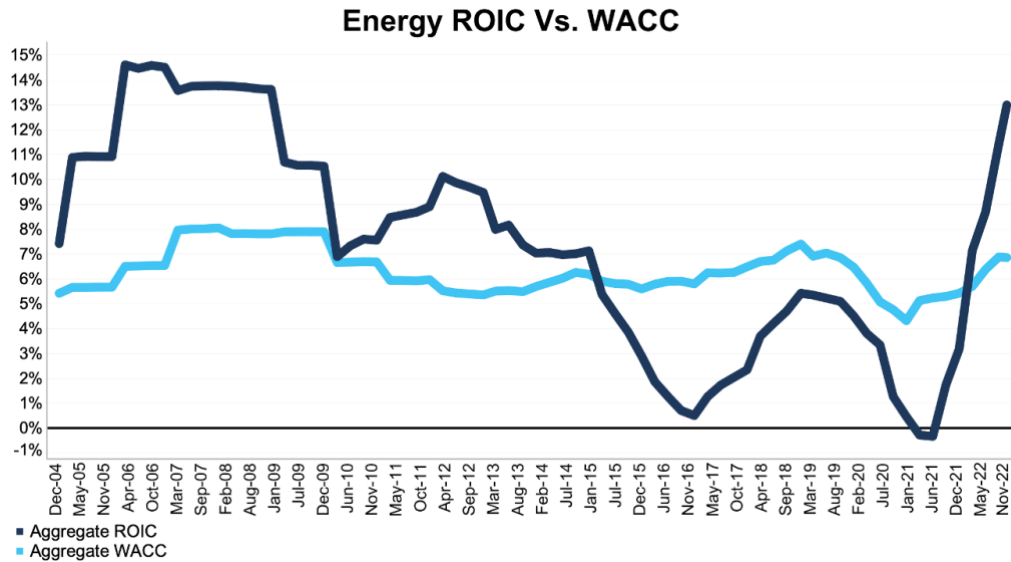
³ Our research utilizes our [Core Earnings](#), a more reliable measure of profits, as proven in [Core Earnings: New Data & Evidence](#), written by professors at Harvard Business School (HBS) & MIT Sloan and published in [The Journal of Financial Economics](#).



Sample Sector Analysis⁴: Energy

Figure 1 shows the Energy sector ROIC rose from 11.4% in 2Q22 to 13.0% in 3Q22. The Energy sector NOPAT margin rose from 14.3% in 2Q22 to 15.0% in 3Q22, while invested capital turns rose from 0.80 in 2Q22 to 0.87 in 3Q22.

Figure 1: Energy ROIC vs. WACC: December 2004 – 11/25/22



Sources: New Constructs, LLC and company filings.

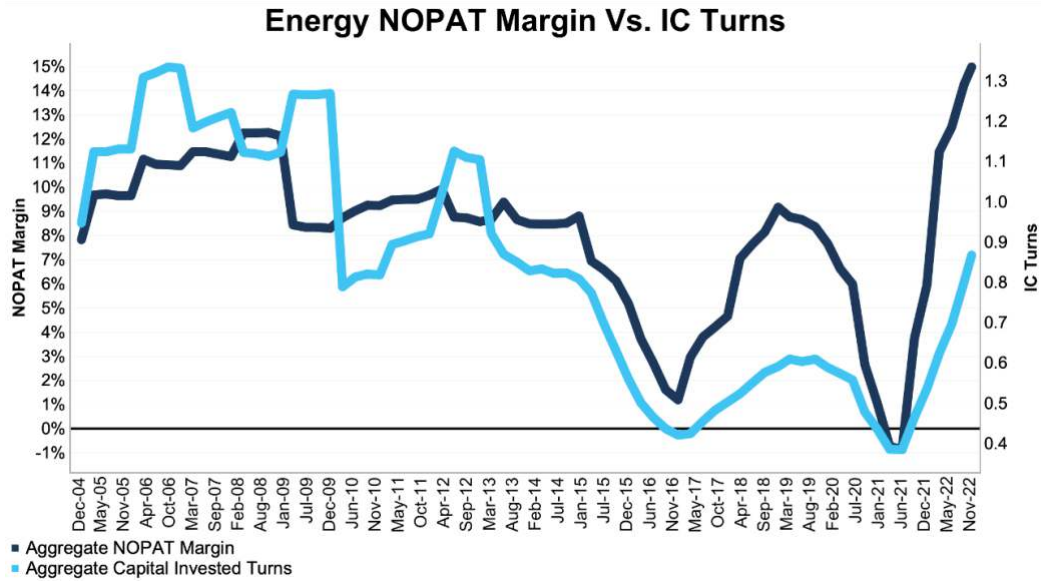
The November 25, 2022 measurement period uses price data as of that date for our WACC calculation and incorporates the financial data from 3Q22 10-Qs for ROIC, as this is the earliest date for which all the 3Q22 10-Qs for the S&P 500 constituents were available.

Figure 2 compares the trends for NOPAT margin and invested capital turns for the Energy sector since 2004. We sum the individual Energy sector constituent values for revenue, NOPAT, and invested capital to calculate these metrics. We call this approach the “Aggregate” methodology.

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



Figure 2: Energy NOPAT Margin and IC Turns: December 2004 – 11/25/22



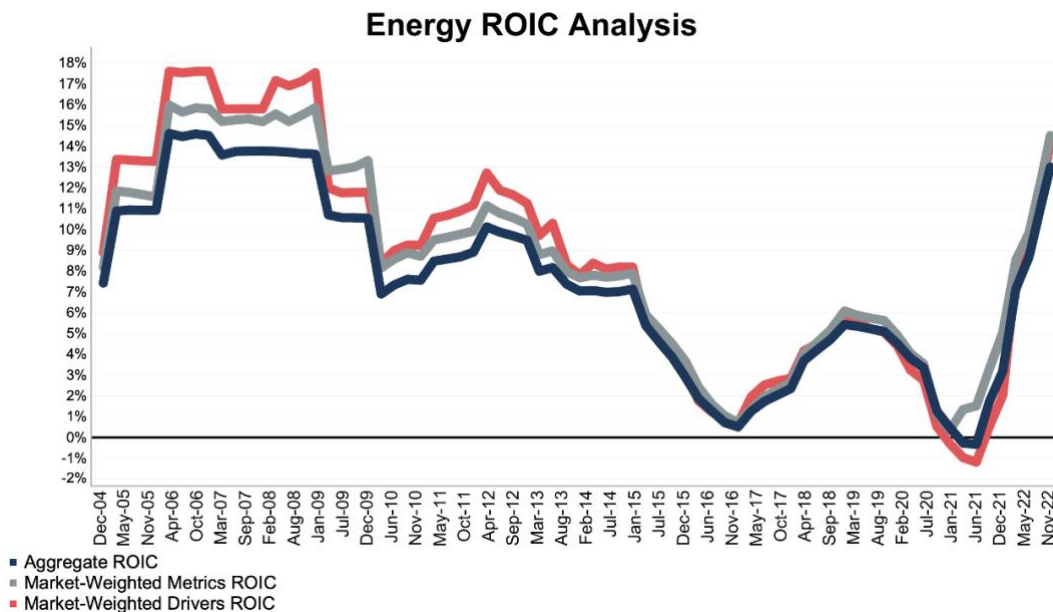
Sources: New Constructs, LLC and company filings.
 The November 25, 2022 measurement period uses price data as of that date for our WACC calculation and incorporates the financial data from 3Q22 10-Qs for ROIC, as this is the earliest date for which all the 3Q22 10-Qs for the S&P 500 constituents were available.

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

For additional perspective, we compare the Aggregate method for ROIC with two 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 Energy sector ROIC.

Figure 3: Energy ROIC Methodologies Compared: December 2004 – 11/25/22



Sources: New Constructs, LLC and company filings.
 The November 25, 2022 measurement period uses price data as of that date for our WACC calculation and incorporates the financial data from 3Q22 10-Qs for ROIC, as this is the earliest date for which all the 3Q22 10-Qs for the S&P 500 constituents were available.

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

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Appendix: Analyzing ROIC with Different Weighting Methodologies

We derive the metrics above by summing the individual S&P 500 constituent values for revenue, NOPAT, and invested capital to calculate the metrics presented. We call this approach the “Aggregate” methodology.

The Aggregate methodology provides a straightforward look at the entire sector, regardless of market cap 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 ROIC with two other market-weighted methodologies:

1. **Market-weighted metrics** – calculated by market-cap-weighting the ROIC for the individual companies relative to their sector or the overall S&P 500 in each period. Details:
 - a. Company weight equals the company’s market cap divided by the market cap of the S&P 500/its sector
 - b. We multiply each company’s ROIC by its weight
 - c. S&P 500/Sector ROIC equals the sum of the weighted ROICs for all the companies in the S&P 500/each sector
2. **Market-weighted drivers** – calculated by market-cap-weighting the NOPAT and invested capital for the individual companies in each sector in each period. Details:
 - a. Company weight equals the company’s market cap divided by the market cap of the S&P 500/its sector
 - b. We multiply each company’s NOPAT and invested capital by its weight
 - c. We sum the weighted NOPAT and invested capital for each company in the S&P 500/each sector to determine each sector’s weighted NOPAT and weighted invested capital
 - d. S&P 500/Sector ROIC equals weighted sector NOPAT divided by weighted sector invested capital

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 by companies entering/exiting the group of companies, which could unduly affect aggregate values despite the level of change from companies that remain in the group.

Market-weighted metrics method

Pros:

- Accounts for a firm’s size relative to the overall S&P 500/sector and weights its metrics accordingly.

Cons:

- Vulnerable to outsized impact of one or a few companies, as shown in the full report. This outsized impact tends to occur only for ratios where unusually small denominator values can create extremely high or low results.

Market-weighted drivers method

Pros:

- Accounts for a firm’s size relative to the overall S&P 500/sector and weights its NOPAT and invested capital accordingly.
- Mitigates potential outsized impact of one or a few companies by aggregating values that drive the ratio before calculating the ratio.

Cons:

- Can minimize the impact of period-over-period changes in smaller companies, as their impact on the overall sector NOPAT and invested capital is smaller.



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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 [paper](#) from Indiana’s Kelley School of Business. Bloomberg features the paper [here](#).

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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