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Empirical Finance Research Paper

Capital Efficiency vs. Revenue Growth: An Empirical Analysis of Long-Term Value Creation in Public Companies (2020–2025)

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Abstract: *This paper examines how two key factors- capital efficiency and revenue growth - shape long-term value creation in companies. Capital efficiency is measured by Return on Invested Capital (ROIC), while growth is captured through the 5-year Compound Annual Growth Rate (CAGR) of revenue. The study looks at 80 companies across multiple sectors, focusing on how well firms balance their growth with the discipline of efficient capital allocation. A correlation analysis is conducted between ROIC and revenue growth, yielding a coefficient of 0.45985, indicating a moderate positive relationship between the two variables. The findings suggest that while rapid revenue growth is an important driver for a company to create long-term value, it is not enough on its own. Long-term performance depends equally on a firm's ability to generate consistent returns on the capital it invests. Companies that manage to combine both growth and efficiency tend to create stronger, more sustainable shareholder value. In contrast, firms that chase scale without efficiency may face stagnation or underperformance over time.*

Keywords: *Capital Efficiency, Long-Term Value Creation, Correlation Analysis.*

I. INTRODUCTION TO DRIVERS OF SUCCESS FOR A FIRM

Traditional growth theory often overlooks revenue growth as the primary driver of firm success, particularly in emerging markets, where scale and market share are perceived as the most critical competitive factors. However, research increasingly suggests that growth without profitability or efficient capital allocation can lead to stagnation or decline in shareholder value (Brealey, Myers & Allen, 2020). This combination of Growth with disciplined capital allocation is what helps in long-term value creation. Capital efficiency, typically measured through Return on Invested Capital (ROIC), has been argued to be a more reliable predictor of long-term returns than revenue growth alone (Koller, Goedhart & Wessels, 2020).McKinsey's studies on valuation reinforce this view, showing that companies with sustained high ROIC outperform peers even when revenue growth is modest..

Investors often reward firms that can balance reinvestment with efficient returns over those that pursue aggressive growth strategies at the expense of profitability (Damodaran, 2012). Revenue growth, however, cannot be dismissed. Firms that expand rapidly often create significant value, particularly when operating in industries with network effects, high capital investment or scale advantages to entry. Studies of Tech firms, for example, demonstrate that periods of high growth are strongly correlated with investor enthusiasm and increases in market capitalisation (Gompers & Lerner, 2001). Yet, long-term sustainability of these gains frequently depends on whether growth is accompanied by adequate returns on capital (Damodaran, 2012).

The tension between these two perspectives—growth versus disciplined efficiency—forms the core of this paper's analysis. By analysing 80 companies across multiple sectors, this research aims to evaluate whether capital efficiency or revenue growth correlates with long-term value creation. The approach will be centric, and the goal is not only to test which factor correlates more closely with sustained firm performance, but also to explore how the balance between the two shapes shareholder value over time.

II. LITERATURE REVIEW

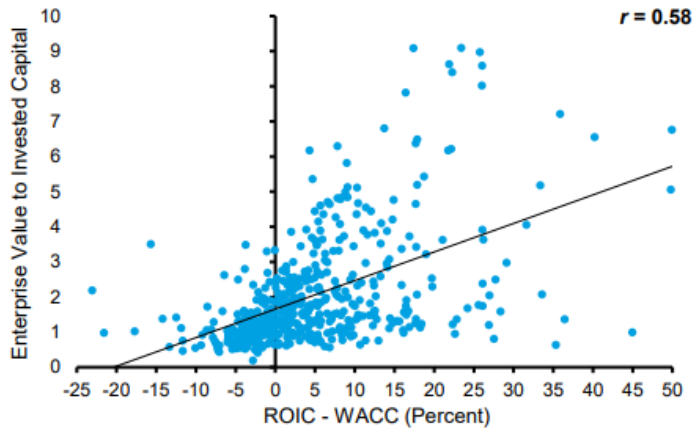
The relationship between revenue growth, capital efficiency, and long-term value creation has been extensively studied across both the Academic and Professional sectors. Traditionally, the literature has debated whether firms should prioritise rapid revenue growth or disciplined capital allocation to maximise shareholder value.

One stream of research emphasises the centrality of growth as the primary driver of value creation.

Scholars such as McGrath (2012) emphasise that sustained revenue growth is critical for maintaining a competitive position in the market. Empirical work by Gompers et al. (2005) also suggests that high-growth firms often command valuation premiums because investors anticipate continued market expansion and increasing cash flows. Studies in emerging markets

similarly reinstate that revenue growth correlates strongly with firm survival and competitive advantage, especially where scale effects and network externalities play a dominant role (Bekaert et al., 2007).

Another line of scholarship argues that growth without efficiency leads to value destruction. Jensen's (1986) "free cash flow hypothesis" posits that firms with excess capital but weak discipline in allocating it often pursue wasteful investments, thereby destroying long-term returns. Research by Koller, Goedhart, and Wessels (2015), in Valuation: Measuring and Managing the Value of Companies, demonstrates that Return on Invested Capital (ROIC) consistently outperforms other metrics as a predictor of long-term shareholder returns, moreover; According to McKinsey's analysis of thousands of global companies, firms that earn ROIC above their weighted average cost of capital (WACC) create economic profit, while those below it destroy value regardless of growth rate (Morgan Stanely, 2023).



Source: FactSet and Counterpoint Global.
Note: Top 500 by sales in the Russell 3000 excluding financials and real estate; ROIC and WACC based on calendar year, and ROIC adjusted to reflect intangible investments; Enterprise value as of 12/31/22; Truncated axes for visualization.

McKinsey's literature has been especially influential in shaping the capital efficiency theory. Their research on "The Granularity of Growth" (2008) and subsequent reports underscores that while growth is a significant factor to total shareholder returns (TSR), its impact is dependent on capital discipline. Moreover, McKinsey's empirical findings show that companies with both high growth and high ROIC consistently outperform peers, whereas firms with high growth but low ROIC tend to stagnate in the long run. These findings align with the notion that profitable growth, not growth alone, is the ultimate determinant of long-term value creation.

Recent empirical studies continue to confirm the dual importance of this. We can find that firms generating high ROIC consistently outperform in total shareholder returns, regardless of size or sector. Similarly, Koller and colleagues (2020) emphasise that growth only adds value when returns exceed the cost of capital — otherwise, expansion simply scales inefficiency. Bain & Company (2018) also contributes to this debate by demonstrating that sustainable value creation originates from "repeatable models," where growth strategies are closely aligned with efficient capital deployment.

In summary, the literature converges on three key insights:

1. Revenue growth is essential for scale and market positioning.
2. Capital efficiency ensures that growth translates into economic profit rather than value destruction,
3. Firms that succeed in balancing both dynamics consistently outperform peers in the long term.

The paper builds on this work by empirically testing the relationship between ROIC and revenue growth across a multi-sector sample of firms from 2020 to 2025, aiming to clarify the weight of each factor in driving sustainable value creation for shareholders.

III. METHODOLOGY

To answer our main question —whether capital efficiency (ROIC) or revenue growth (CAGR) matters more for value creation —I followed a clear, step-by-step process.

A) Choosing the Companies

We picked 80 companies in total: the 20 largest by market capitalisation in four different sectors. The selection of sectors was made considering the balance among the intensity of Capital, Entry Barriers, and the Ratio between actual and intangible assets. The reason for this was to see if our results were true across different types of businesses, not just one particular industry.

The following are the sectors chosen after consideration of the factors mentioned above:

1. Oil & Gas
2. Healthcare
3. Financial services
4. Technology

The following are the top 20 companies by market Cap chosen :

UnitedHealth
HCA Healthcare
McKesson
CVS Health
The Cigna Group
Elevance Health
Siemens Healthineers
Cencora
Cardinal Health
Fresenius
Dr. Sulaiman Al Habib Medical Services Group Company
JD Health
Pro Medicus
AIER Eye Hospital
Rede D'Or São Luiz
Tenet Healthcare
IHH Healthcare
Fresenius Medical Care
Max Healthcare Institute
Fisher & Paykel Healthcare
NVIDIA
Microsoft
Apple
Alphabet (Google)
Amazon
Meta Platforms (Facebook)
Broadcom
Taiwan Semiconductor Manufacturing Co.
Tesla
Oracle
Tencent
Netflix
Palantir
SAP
Samsung
ASML
AMD
Alibaba
Cisco
Salesforce

JPMorgan Chase
Visa
Mastercard
ICBC
Bank of America
Agricultural Bank of China
China Construction Bank
Wells Fargo
Bank of China
Morgan Stanley
HSBC
Goldman Sachs
American Express
Commonwealth Bank
HDFC Bank
Royal Bank of Canada
Charles Schwab
S&P Global
Citigroup
Mitsubishi UFJ Financial
Saudi Aramco
Exxon Mobil
Chevron
PetroChina
Shell
TotalEnergies
ConocoPhillips
CNOOC
Enbridge
Southern Company
TAQA
Duke Energy
Sinopec
BP
Petrobras
Williams Companies
ADNOC Gas
Enterprise Products
EOG Resources
Canadian Natural Resources

B) Collecting the Data

We then gathered financial data for these companies from reliable sources like annual reports, financial databases, and company filings. For each company, we collected & interpreted:

- CAGR (5yr)
- ROIC

This ensured we had both growth numbers and efficiency numbers.

C) Calculating Revenue Growth (CAGR)

To measure growth, we calculated the 5-year Compound Annual Growth Rate (CAGR) of revenue.

The formula we used:

$$CAGR = \left(\frac{Revenue_t}{Revenue_{t-5}} \right)^{\frac{1}{5}} - 1$$

This smooths out any recent volatility of individual years and gives a fairer picture of long-term growth.

D) Measuring Capital Efficiency (ROIC)

To measure how well companies used their money, we calculated Return on Invested Capital (ROIC):

$$ROIC = \frac{Net\ Operating\ Profit\ After\ Tax}{Invested\ Capital}$$

Here, Invested Capital means the money in the business cycle (equity + debt – non-operating assets). ROIC indicates whether a company is effective at generating profits from its capital.

E) Organising the Dataset & basic Statistics

I placed all the data (CAGR and ROIC for each company) into a spreadsheet. We also double-checked it for errors and removed any extreme outliers that could have distorted results.

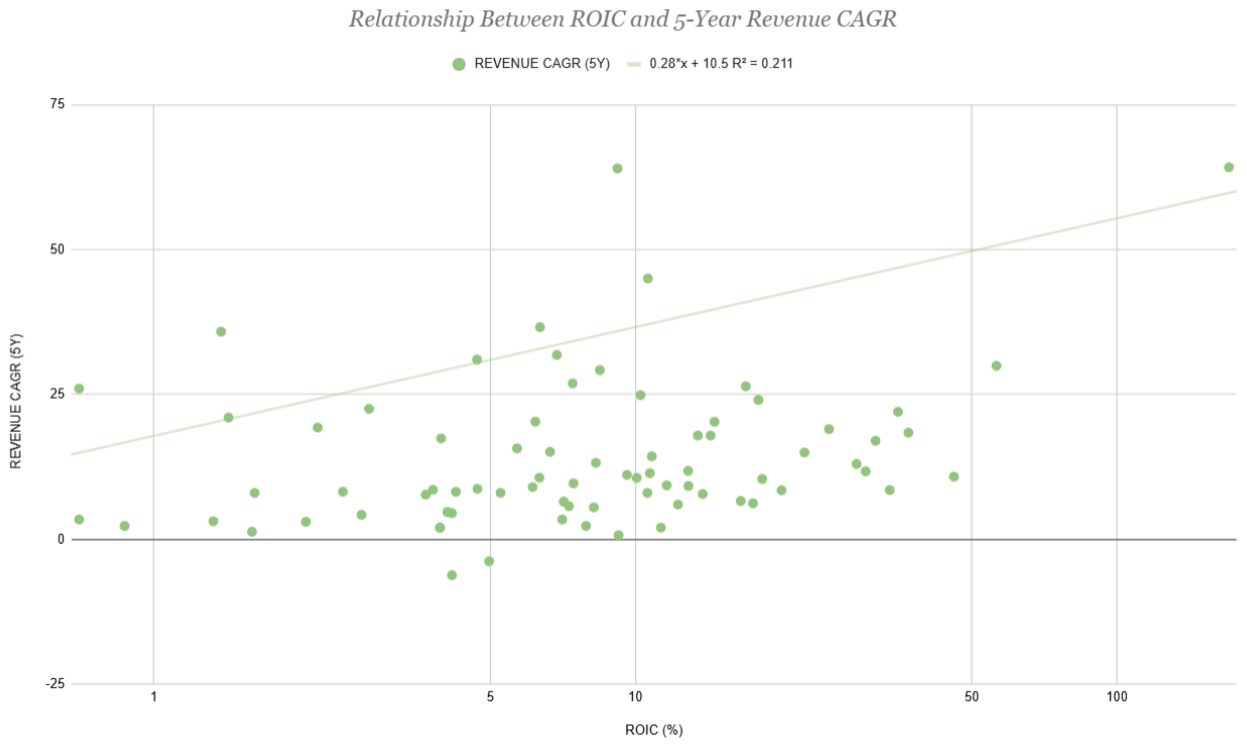
Also, I calculated some basic, important statistical values for better interpretation of our data analysis, which are listed below:

ROIC			
Sector	**Mean**	**Median**	**Standard deviation**
Healthcare	9.224210526	9.18	4.797108291
Technology	27.539	13.905	36.31968828
Financial Service	7.222777778	2.75	11.74750527
Oil & Gas	8.355	6.48	5.565866368
Combined	13.28766234	7.9	21.13135858
CAGR 5 Years			
Sector	**Mean**	**Median**	**Standard deviation**
Healthcare	18.70210526	10.6	16.53178919
Technology	18.3495	16.045	13.64302578
Financial Service	11.1905	8.615	8.983614602
Oil & Gas	10.002	8.33	8.807424858
Combined	14.43975	10.615	12.79465741

F) Visual Analysis

We then created scatterplots, where:

- The x-axis was ROIC (efficiency)
- The y-axis was CAGR (growth)



G) Statistical Test (Correlation)

Lastly, I ran a correlation test to measure the strength of the relationship between ROIC and CAGR.
Our result was 0.45985, which is a moderate positive correlation.

H) Interpreting the Findings

From our analysis, we observed that efficiency (ROIC) and growth often move in tandem, but not always. Different industries showed different patterns.

In industries that require significant capital, such as energy, efficiency mattered more than growth. These companies spend heavily on plants, machines, and equipment. If they do not utilise this capital effectively, even high sales growth will not help them much. Growth without efficiency in these industries often results in lower profits, higher debt, and weaker long-term performance. Here, efficiency is the key factor that determines success.

In contrast, in industries such as technology or consumer services, we have observed the opposite. Companies could grow very fast even if their efficiency was low in the early years. Investors were willing to support them as long as they continued to show strong growth.

For example, many technology companies initially ran at low returns but were still highly valued because their revenue growth was explosive. Over time, however, the ones that survived were those that managed to improve their efficiency in tandem with growth.

In the end, the strongest companies were those that balanced both—maintaining strong growth while also utilising their capital effectively. Neither growth alone nor efficiency alone was enough across all industries. The combination of the two, shaped by the sector's nature, created the most value for investors.

IV. CONCLUSION

The study reveals that the balance between efficiency (ROIC) and growth varies across different industries. Capital-intensive sectors, such as manufacturing, depend more on efficiency, while high-growth sectors like technology can succeed with rapid expansion even when efficiency is low in the early stages. However, long-term value is created when both growth and efficiency coexist. This finding is important for investors, companies, and policymakers, as it underscores that strategies for long-term value creation should be tailored to the industry's nature and stage of growth.

Interest Conflicts

The author(s) declare that there is no conflict of interest concerning the publishing of this paper.

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