

ANALYSTS' AND INVESTORS' EARNINGS GROWTH EXPECTATIONS FOR GROWTH STOCKS

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ABSTRACT

This study investigates the earnings growth expectations of analysts and investors in relation to the performance of growth stocks. Growth stocks, often characterized by high price-to-earnings (P/E) ratios, attract investor interest due to their projected earnings expansion. However, past research suggests that these stocks frequently underperform market expectations, raising questions about the accuracy of earnings forecasts and potential biases in valuation. This study seeks to determine whether analysts or investors exhibit greater over-optimism in their earnings growth projections and how this impacts abnormal stock returns.

To measure optimism biases, stock portfolios were categorized based on the Price/Earnings-to-Growth (PEG) ratio and its risk-adjusted counterpart, the PERG ratio, which incorporates firm-specific risk factors. Using data from 2010 to 2023, the study applies the Fama-French Three-Factor Model to estimate abnormal returns across portfolios grouped by analysts' and investors' expectations.

The findings indicate that analysts systematically underestimate earnings growth expectations. In contrast, portfolios formed based on investor expectations do not exhibit statistically significant negative abnormal returns, challenging the hypothesis that investors are excessively optimistic. The introduction of the PERG ratio, which adjusts for risk, confirms these trends, reinforcing the notion that analysts remain conservative in their forecasts, whereas investors do not significantly overestimate growth potential.

Further regression analysis identifies key financial variables that contribute to expectation biases. Sales growth, return on equity (ROE), and gross margin are found to be underestimated by analysts, leading to higher abnormal returns, whereas extensive analyst coverage correlates with more optimistic earnings forecasts, resulting in lower returns. Investors also appear to underestimate certain profitability indicators, such as gross margin, leading to valuation distortions. This article is part of a research study.

Keywords: Analysts, Investors, earning growth expectation, Growth stock

INTRODUCTION

The price-to-earnings (P/E) ratio is a cornerstone of investment analysis, serving as a key differentiator between value and growth stocks (Basu, 1977, 1978; Jaffe et al., 1989). Growth stocks, characterized by high P/E ratios, are expected to experience significant earnings growth, leading to premium valuations by investors. However, a paradox emerges: research suggests growth stocks often underperform despite their alluring potential.

This underperformance can be attributed to the inherent risks associated with growth stocks. Their valuations are heavily influenced by anticipated future growth, making them more susceptible to disappointment if those expectations fall short. Essentially, growth stocks are priced based on a story of future success, but this story inherently carries uncertainty.

The root cause of this optimistic outlook on growth stocks is a subject of debate. Some argue it stems from overly enthusiastic analyst predictions. La Porta (1996) suggests analysts might extrapolate

past performance too far into the future, inflating growth expectations. This aligns with the findings of Dechow and Sloan (1997) who point towards excessively optimistic analyst's earnings forecasts for growth stocks.

Another perspective emphasizes investor overreaction, aligning with Benjamin Graham's value investing principles. Graham, widely regarded as the father of value investing, argued in his seminal 1934 work with Dodd that investors tend to overestimate the prospect of growth stocks (Basu, 1977).

However, numerous studies indicate that the value premium has declined in recent years. Traditionally, the value premium posits that value stocks—those with low price-to-book or low P/E ratios—tend to outperform growth stocks over the long term (Lea-Marija Bevanda, 2021). Yet, following the 2007–2009 financial crisis, growth stocks gained momentum, diminishing the conventional value premium resulted in growth stocks no longer underperforming.

Despite this shift, it remains crucial to examine whether certain market participants continue to hold excessively optimistic earnings growth expectations. To address this question, we classify these expectations into two distinct groups: investors and analysts.

This paper aims to extend beyond a conventional examination of growth stocks performance by critically analyzing the earning growth expectation through the perspectives of analysts and investors.

OBJECTIVE

15. The primary objective of this paper is to determine whether analysts or investors exhibit excessive optimism in their earnings growth expectations for growth stocks. By also examining the degree of over-optimism in each group. Through this analysis, the research aims to provide a clearer understanding of expectation biases, impacting the growth stock performance.
16. The secondary objective of this study builds upon the initial investigation. Here, by embracing a deeper exploration in order to identify the potential variables that can explain the over-expected earnings growth from the perspectives of analysts and investors.

Literature Review

Over-optimistic of Investors and Analysts for growth stocks

DeBondt and Thaler (1985, 1987) argue that the value premium arises from irrational investor behaviors, such as overreaction or errors in expectations. La Porta (1996) shows that during the period from 1982 to 1991, stocks with high expectations for earnings growth forecast from analysts typically underperformed compared to those with more modest earnings expectations, with an average underperformance gap of 20.9%. This discrepancy remains significant even after adjusting for variables such as size and industry categories.

Also, when facing negative information, analysts may opt to withdraw from making predictions, leading to an overly optimistic bias in consensus forecasts (McNichols & O'Brien, 1997; Hong & Kubik, 2003; Scherbina, 2004; Clement & Tse, 2005). LAKONISHOK et al., (1994) offered an alternative explanation for the value premium, suggesting that growth stocks were perceived by investors to have sustained high growth. However, the competitive business landscape often made it challenging for these stocks to maintain a consistent growth trajectory as anticipated.

Overall, the lack of predictability in growth aligns with the economic understanding that competitive forces naturally act to rectify growth in profitability that is either too high or too low.

Chan et al. (2003) Overall, the absence of predictability in growth fits in with the economic intuition that competitive pressures ultimately work to correct excessively high or excessively low profitability growth.

Basu (1977) credited this occurrence, referred to as the value anomaly, to investor overreaction, a concept aligned with the tenets of value investing promoted by Benjamin Graham. Graham recognized as the pioneer of value investing, argued in his 1934 partnership with Dodd that investors have a tendency to overestimate the prices and prospects of growth stocks

PEG ratio

One such metric that was introduced by Lynch (1989) This ratio called PEG ratio or Price-Earnings-to-Growth. Essentially, the PEG ratio is derived by dividing a stock's PE ratio by its projected earnings growth rate, as elucidated by Lynch (1989).

Therefore, the PEG ratio serves as an alternative method to assess a company's future earnings growth capability. PE. Lynch (1989) provides a baseline for using the PEG ratio, indicating that a company is considered "fully" valued when its trailing PE ratio matches its growth rate, that is when PEG equals 1.0 Hence, a PEG ratio higher than 1 suggests that the PE ratio surpasses the earning growth rate, signaling an overvalued condition for the share. Conversely, a PEG ratio below 1 indicates that the PE ratio is lower than the earning growth rate, indicating an undervalued status for the share.

The PEG ratio is calculated by dividing the P/E ratio by the expected earnings growth rate (G). According to Fairfield (1994) and Basu (1978), as well as numerous research papers, the P/E ratio reflects investors' earnings growth expectations. Schatzberg and Vora (2008), along with many other studies, use the expected earnings growth rate (G) based on analysts' earnings forecasts as a benchmark.

When P/E is equal to G, it suggests that investors rely on analysts' growth projections, indicating alignment between investor expectations and analysts' estimates. However, when P/E is higher than G, it implies that investors do not adhere or rely on analysts' forecasts and instead anticipate a higher earnings growth rate themselves, potentially demonstrating over-optimism..

Thus, when $P/E = G$, it represents the analysts' perspective, investors appear to follow analysts' earnings expectations. In contrast, when $P/E > G$, it reflects the investors' perspective, suggesting that investors either perceive the analysts' earnings projections as incorrect or disregard them in favor of their own, more optimistic expectations. The higher the P/E to G ratio, the greater the likelihood that investors are overestimating future earnings growth relative to analysts' estimates.

PERG ratio

However, many papers have further improved and adapted the PEG ratio by incorporating additional variables into the calculation including adjustments for risk (Trombley, 2008; Schnabel, 2009)

(Chan et al., 2003; Wu, 2014) PE ratio also indicates the market's anticipation of future growth and the risk associated with the firm. Also, Wan-Ting Wu (2014) suggested that investing in this portfolio is risky and could bring about unpleasant outcomes. Although the market expects high growth from growth firms, its realized earnings growth could be extremely high or extremely low in subsequent years. Besides, these firms have a high tendency to report losses and their growth is volatile and not sustainable. Despite the high growth expectation from the market, the actual performance of high P/E firms is subject to higher risk and may disappoint investors.

Estrada (2005) and Trombley (2008) suggest that the PEG ratio itself needs adjustment to accommodate the risk associated with the stock. Therefore, by including risk as a factor in the calculation may enhance the effectiveness. Estrada (2005) introduced the PERG ratio, which multiplies the PEG ratio by the risk factor, using beta as a measure of risk. This adjustment may further analysts and investor perspective by considering the risk factor.

Research hypothesis

Hypothesis 1: Growth stock with a PEG of approximately one by using the earning growth rate of analysts forecast will earn zero abnormal return

Hypothesis 2: Growth stock with PE higher than G in PEG will earn negative abnormal return by using growth rate of analysts

Hypothesis 3: By re-examining the PEG ratio, the risk associated with growth stocks was considered. Growth Stock with PERG approximately one will earn zero abnormal return.

Hypothesis 4: Growth stock with a PERG of higher than one by using the earning growth rate of analyst forecast will earn negative abnormal return

Hypothesis 5: By regressing these variables on portfolios based on analysts' and investors' perspectives in earnings growth expectations, categorized by PEG and PERG, the analysis is expected to yield statistically significant results. The expected relationships are :Higher Past sales growth lead to lower abnormal return of Investors and Analysts, Higher number of analyst coverage lead to lower abnormal return of Investors and Analysts, Higher CAPEX lead to higher abnormal return of Investors and Analysts ,Higher Gross profit margins lead to higher abnormal return of Investors and Analysts, Higher Cash flow from operation lead to higher abnormal return of Investors and Analysts, Higher Free Cash flow lead to higher abnormal return of Investors and Analysts, Higher ROE lead to higher abnormal return of Investors and Analysts, Higher ROA lead to higher abnormal return of Investors and Analysts

METHODOLOGY

1. Calculating Deciles Based on PEG and PERG

2. Calculation of Abnormal Returns

Calculate individual stock abnormal returns for growth stocks, calculated quarterly by performing daily regressions using the Fama-French Three-Factor Model to derive the quarterly abnormal return for each stock from 2011 to 2023.

$$R_{i,t} - R_{f,t} = \alpha_{i,t} + \beta_1(R_{m,t} - R_{f,t}) + \beta_2(SMB_t) + \beta_3(HML_t) + \epsilon_{i,t}$$

3. Examine the abnormal returns of a portfolio from the perspectives of analysts and investors categorized by PEG deciles

$$\begin{aligned} \alpha_{i,t} = & \beta_0 + \beta_1 \text{ Dummy (Decile 3) }_{i,t-1} + \beta_2 \text{ Dummy (Decile 4) }_{i,t-1} + \beta_3 \text{ Dummy (Decile 5) }_{i,t-1} \\ & + \beta_4 \text{ Dummy (Decile 6) }_{i,t-1} + \beta_5 \text{ Dummy (Decile 7) }_{i,t-1} + \beta_6 \text{ Dummy (Decile 8) }_{i,t-1} \\ & + \beta_7 \text{ Dummy (Decile 9) }_{i,t-1} + \beta_8 \text{ Dummy (Decile 9) }_{i,t-1} + \epsilon_{i,t} \end{aligned}$$

β_0 = Baseline group (PEG Decile2)

β_0 = Expected($\alpha_{i,t}$)(PEG $\approx$ 1)

$\beta_0 + \beta_x \text{ Dummy (Decile x) }_{i,t-1} = \text{Expected}(\alpha_{i,q} | \text{PEG} > \approx 1)$

Examine Analysts over-optimistic

$\beta_0 = \text{Expected}(\alpha_{i,q} | \text{PEG} \approx 1)$

β_0 represents the expected return of stocks that have a PEG ratio approximately equal to one, indicating portfolio abnormal return with analysts' view on expected earning growth rate. We will perform a t-test to determine the statistical significance.

Examine Investors over-optimistic

$\beta_0 + \beta_x \text{ Dummy (Decile x) }_{i,t-1} = \text{Expected}(\alpha_{i,q} | \text{PEG} > \approx 1)$

In this case, $\beta_x \text{ Dummy (Decile x) }_{i,t-1}$ represents the difference in expected abnormal returns between stocks with a PEG ratio approximately equal to one and those with a PEG ratio greater than approximately one or the difference in expected abnormal returns between investor's portfolio and analyst's portfolio.

$\beta_0 + \beta_x$ Dummy (Decile x) $i, t-1$ indicating portfolio abnormal return with investors's view on expected earning growth rate

4.Reassessment of Analysts' and Investors' Earnings Growth Expectations Categorized by PERG, Incorporating Risk Factors

$\alpha_{i,t} = \beta_0 + \beta_1$ Dummy (Decile 3) $i, t-1 + \beta_2$ Dummy (Decile 4) $i, t-1 + \beta_3$ Dummy (Decile 5) $i, t-1 + \beta_4$ Dummy (Decile 6) $i, t-1 + \beta_5$ Dummy (Decile 7) $i, t-1 + \beta_6$ Dummy (Decile 8) $i, t-1 + \beta_7$ Dummy (Decile 9) $i, t-1 + \beta_8$ Dummy (Decile 9) $i, t-1 + \varepsilon_{i,t}$

β_0 = Baseline group (PERG Decile2)

β_0 = Expected($\alpha_{i,t}$)(PERG $\approx$ 1)

$\beta_0 + \beta_x$ Dummy (Decile x) $i, t-1 =$ Expected($\alpha_{i,q}$ | PERG $> \approx 1$)

Re-Examine Analysts over-optimistic

$\beta_0 =$ Expected($\alpha_{i,q}$)(PERG $\approx$ 1)

β_0 represents the expected return of stocks that have a PERG ratio approximately equal to one, indicating portfolio abnormal return with analysts' view on expected earning growth rate. We will perform a t-test to determine the statistical significance.

Re-Examine Investors over-optimistic

$\beta_0 + \beta_x$ Dummy (Decile x) $i, t-1 =$ Expected($\alpha_{i,q}$ | PERG $> \approx 1$)

In this case, β_x Dummy (Decile x) $i, t-1$ represents the difference in expected abnormal returns between stocks with a PEG ratio approximately equal to one and those with a PEG ratio greater than approximately one or the difference in expected abnormal returns between investor's portfolio and analyst's portfolio.

$\beta_0 + \beta_x$ Dummy (Decile x) $i, t-1$ indicating portfolio abnormal return with investors's view on expected earning growth rate

5. Investigate variables that potentially explain abnormal return of portfolio with analysts perspective and investors perspective categorize by PEG, and PERG decile

$\alpha_{i,t} = \beta_0 + \beta_1(\text{SALESGROWTH}) + \beta_2(\text{N\#ANALYSTS}) + \beta_3(\text{CAPEX}) + \beta_4(\text{Grossmargin}) + \beta_5(\text{CFO}) + \beta_6(\text{FCF}) + \beta_7(\text{ROE}) + \beta_8(\text{ROA}) + \varepsilon_{i,t}$

RESULTS

Table 1
The abnormal returns of a portfolio form by the perspectives of analysts and investors categorized by PEG deciles

Variables	Coefficient	t-Statistic
B0	0.0201	4.59210***
D_3	-0.0131	-2.11099*
D_4	-0.0144	-2.33752*
D_5	-0.0189	-3.05724**
D_6	-0.0160	-2.57872**
D_7	-0.0233	-3.75914***
D_8	-0.0143	-2.30673*
D_9	-0.0184	-2.97387**
D_10	-0.0224	-3.83231***
B0 + D_3	0.0070	0.92476

B0 + D_4	0.0057	0.74078
B0 + D_5	0.0012	0.15320
B0 + D_6	0.0041	0.53877
B0 + D_7	-0.0032	-0.42718
B0 + D_8	0.0058	0.75978
B0 + D_9	0.0017	0.21146
B0 + D_10	-0.0023	-0.32838

Regression results show that growth stocks with a PEG ratio close to one generate a significant positive abnormal return of 2.01% ($t=4.5921$), contradicting Hypothesis 1, which assumes zero abnormal returns. This suggests that analysts underestimate earnings growth expectations, leading to positive abnormal returns. Investor optimism, measured through PEG decile dummy variables ($D3$ to $D10$), correlates with a decline in abnormal returns, with higher investor optimism amplifying the negative impact (e.g., $D10 = -0.0224$, $t = -3.8323$, $p < 0.001$). However, despite this trend, the $B_0 + D_x$ results show no statistically significant negative abnormal returns. Even in Decile 10, where investor optimism is highest, abnormal returns remain near zero (-0.0023 , $t = -0.3284$), contradicting Hypothesis 2. This indicates that while investors are optimistic, they do not excessively overestimate earnings growth expectations.

Table 2
The abnormal return of Growth Stock Portfolio Construction from Market and Analysts' Perspectives by Considering Risk Factors

Variables.	Coefficient	t-Statistic
B0	0.0215	4.4600***
D_3	-0.0086	-1.2560
D_4	-0.0088	-1.2950
D_5	-0.0217	-3.1820**
D_6	-0.0126	-1.8470
D_7	-0.0272	-3.9990***
D_8	-0.0258	-3.7840***
D_9	-0.0263	-3.8640***
D_10	-0.0183	-2.6880**
B0 + D_3	0.0129	1.5485
B0 + D_4	0.0127	1.5175
B0 + D_5	-0.0002	-0.0228
B0 + D_6	0.0089	1.0671
B0 + D_7	-0.0058	-0.6900
B0 + D_8	-0.0043	-0.5145
B0 + D_9	-0.0048	-0.5801
B0 + D_10	0.0032	0.3802

Regression results from Table 2, which incorporate risk factors (Beta), show that growth stocks with a PERG ratio close to one generate a significant positive abnormal return of 2.15% per period ($t=4.46$), even after adjusting for risk. This contradicts Hypothesis 3, which assumes that growth stocks with a PERG of approximately one should yield zero abnormal returns, reinforcing the notion that analysts systematically underestimate earnings growth expectations. The dummy variables ($D3$ to $D10$), which measure the difference between investor and analyst expectations, reveal that while Deciles 3 and 4 show negative differences, they lack statistical significance. However, Deciles 7 to 10 exhibit stronger negative effects with high statistical significance, confirming that stocks where investors expect significantly

higher growth than analysts experience the greatest decline in abnormal returns, even after adjusting for risk. Despite this trend, the $B_0 + D\alpha$ results show no statistically significant negative abnormal returns, contradicting Hypothesis 4, which posits that growth stocks with a PERG greater than one should yield negative abnormal returns. These findings remain consistent across both PEG and PERG measures, suggesting that analysts consistently underestimate earnings growth, leading to positive abnormal returns, while investors' higher earnings expectations do not result in statistically significant negative abnormal returns, indicating they are not excessively optimistic.

Table 3
Variables that potentially explain abnormal return of portfolio with analysts perspective and investors perspective categorize by PEG decile

Variables	Analyst (Decile2)	Investor (Decile3)	Investor (Decile4)	Investor (Decile5)	Investor (Decile6)
const	0.018766	0.015157	-0.012712	-0.003257	0.009372
t-stat	1.4740	1.5850	-1.0013	-0.1835	0.7950
SALESGROWTH	0.000113	0.000252	0.000158	0.000276	0.000679
t-stat	0.6492	3.4038***	2.1316*	1.0827	3.3262***
N#ANALYSTS	-0.001777	-0.001391	-0.001108	-0.001915	-0.001462
t-stat	-2.9108**	-2.5552*	-1.9495	-2.5290*	-2.8136**
CAPEX	0.000024	0.000016	0.000016	0.000012	0.000012
t-stat	1.2126	0.7841	0.6436	0.6519	0.9436
GROSSMARGIN	0.000877	0.000005	0.000823	0.000608	0.000429
t-stat	3.1484*	0.3763	3.2696**	1.8237	1.9284
CFO	-0.000926	-0.002325	0.009058	-0.004578	0.004736
t-stat	-0.1090	-0.3080	1.5555	-2.0877*	0.9445
FCF	0.000014	0.000016	0.000018	0.000009	0.000011
t-stat	2.1886*	2.0512*	2.3529*	1.4164	1.9269
ROE	0.000284	0.000150	-0.000005	0.000120	0.000101
t-stat	1.5017	0.8968	-0.0506	0.5001	0.9227
ROA	-0.001680	0.000455	-0.000374	-0.000283	-0.001789
t-stat	-1.8534	0.5403	-0.4513	-0.2373	-2.2536*

Variables	Investor (Decile7)	Investor (Decile8)	Investor (Decile9)	Investor (Decile10)
const	-0.023841	-0.016186	-0.022922	-0.043797
t-stat	-2.0853*	-1.3482	-1.7106	-3.0270***
SALESGROWTH	-0.000075	0.000002	0.000229	0.000729
t-stat	-0.336	1.0251	1.0433	3.8555***
N#ANALYSTS	-0.000414	-0.000202	-0.000250	0.000756
t-stat	-0.8214	-0.3704	-0.4078	1.0946
CAPEX	0.000000	0.000008	-0.000012	0.000001
t-stat	0.0094	0.6486	-1.0529	0.0791
GROSSMARGIN	0.000446	0.000638	0.000582	0.000394
t-stat	2.1616*	3.0182**	2.4679*	1.7255
CFO	-0.013027	-0.003855	-0.000339	0.000954
t-stat	-2.3012**	-0.8367	-0.4908	0.2124
FCF	0.000006	0.000004	-0.000001	0.000010
t-stat	1.1359	1.1139	-0.1224	1.1439
ROE	0.000074	0.000112	-0.000180	-0.000016

t-stat	0.9081	0.9006	-0.5466	-0.0362
ROA	0.000367	-0.001003	-0.000005	0.002228
t-stat	0.4921	-1.3172	-0.0043	1.4962

Regression results from Table 3 show that investors may underestimate sales growth, leading to higher abnormal returns, while analysts show no significant effect. Greater analyst coverage (N#) negatively impacts abnormal returns for both groups, confirming overoptimistic earnings forecasts. Gross margin positively affects abnormal returns, suggesting both analysts and investors underestimate its role. Free cash flow (FCF) shows a strong effect for analysts but limited influence on investors, similar to ROA and CFO.

Table 4

Variables that potentially explain abnormal return of portfolio with analysts perspective and investors perspective categorize by PERG decile

Variables	Analyst (Decile2)	Investor (Decile3)	Investor (Decile4)	Investor (Decile5)	Investor (Decile6)
const	0.03532	0.00766	0.02460	-0.03464	0.01476
t-stat	2.5667 *	0.7264	1.8508	-2.7771 **	0.7192
SALESGROWTH	0.00043	0.00052	0.00013	0.00078	0.00005
t-stat	2.5402 *	2.122 *	1.8457	3.280 **	0.1598
N#ANALYSTS	-0.00246	0.00002	-0.00119	-0.00030	-0.00268
t-stat	-3.8463 ***	0.0384	-1.9299	-0.5454	-2.8935 **
CAPEX	0.00000	0.00000	0.00001	0.00000	0.00000
t-stat	0.1748	0.0019	1.0189	0.1246	-0.2538
GROSSMARGIN	0.00006	0.00000	0.00040	0.00062	0.00080
t-stat	0.2288	0.1728	1.5385	2.5996 **	2.0395 *
CFO	-0.01730	-0.00230	-0.00430	-0.00377	-0.02782
t-stat	-2.6465 **	-0.2231	-1.1157	-2.2137 *	-3.0588 **
FCF	0.00001	0.00000	0.00002	0.00001	0.00002
t-stat	1.9388	0.7118	1.7158	1.5647	1.4543
ROE	0.00046	0.00012	0.00039	-0.00001	0.00001
t-stat	2.2939 *	0.5742	1.8361	-0.0704	0.0523
ROA	-0.00115	-0.00068	-0.00263	0.00030	-0.00076
t-stat	-1.2626	-0.761	-2.8703 **	0.3536	-0.5858

Variables.	Investor (Decile7)	Investor (Decile8)	Investor (Decile9)	Investor (Decile10)
const	-0.00608	-0.02163	-0.01143	-0.03893
t-stat	-0.4517	-1.6232	-0.8765	-2.6133 **
SALESGROWTH	0.00016	0.00054	0.00059	0.00054
t-stat	0.7429	2.3042 *	2.9936 **	2.8161 **
N#ANALYSTS	-0.00100	-0.00064	-0.00085	-0.00044
t-stat	-1.5596	-1.068	-1.3084	-0.6256
CAPEX	0.00002	0.00001	0.00002	0.00000
t-stat	0.9179	0.5483	0.5708	0.0974
GROSSMARGIN	0.00029	0.00063	0.00028	0.00095
t-stat	1.1681	2.4688 *	1.176	3.4852 ***
CFO	0.00162	-0.00339	-0.01103	0.00455
t-stat	0.1938	-0.7224	-1.4637	0.9488
FCF	0.00001	0.00001	0.00001	0.00000

t-stat	1.1359	1.1139	-0.1224	1.1439
ROE	0.000074	0.000112	-0.000180	-0.000016
t-stat	0.9081	0.9006	-0.5466	-0.0362
ROA	0.000367	-0.001003	-0.000005	0.002228
t-stat	0.4921	-1.3172	-0.0043	1.4962

Regression results from Table 4 show that sales growth positively affects abnormal returns for both analysts and investors, contradicting the hypothesis of a negative effect. Analyst coverage (N#) negatively impacts analysts' portfolios but is mostly insignificant for investors, indicating analysts overestimate its importance. Gross margin significantly affects investor portfolios but not analysts', suggesting investors underestimate its role. FCF shows no effect for either group, while ROE positively impacts analyst portfolios, implying analysts underestimate its importance. CFO negatively affects analysts' returns but is mostly insignificant for investors, and ROA and CAPEX show no consistent effects, indicating no systematic misjudgment.

CONCLUSION AND FUTURE WORK

This study aims to assess whether analysts or investors exhibit excessive optimism in their earnings growth expectations for growth stocks and also explores the degree of over-optimism in each group through conducting a portfolio of growth stock based on Investor's perspective and analyst's perspective on earning expectation of growth stock from 2010-2023 in the context of US stock market. Through this analysis, this study will provide clearer understanding of earning expectation bias on growth stock.

The results of the portfolio of analyst's view on earning growth expectation results in significant positive abnormal return. Suggest that analysts underestimate in earnings growth expectation of growth stock. The difference in abnormal return of portfolio between investor's view and analyst's view on earning growth expectation is getting increasingly negative and statistically significant as investors set higher earnings growth expectations than analysts. However, the abnormal return of the portfolio from the investor's perspective remains statistically insignificant and close to zero which suggests that investors are not excessively optimistic in their earnings growth projections in growth stock.

The secondary objective of this study builds upon the initial investigation. Here, by embracing a deeper exploration in order to identify the potential variables that can explain the over-expected earnings growth from the perspectives of analysts and investors.

The findings indicate that sales growth and ROE have a significantly positive effect on abnormal returns in portfolios based on the analyst perspective. This suggests that analysts underestimate the importance of these variables, leading to lower expected earnings growth projections and, consequently, higher abnormal returns. This underestimation may be one of the reasons why analysts underestimate the earnings growth potential of growth stocks. However, while analysts tend to underestimate earnings growth expectations for growth stocks, certain variables exhibit a negative effect on abnormal returns in analyst-earning growth expectation perspective portfolios, including the number of analysts coverage and cash flow from operations. This suggests that analysts may overestimate the significance of these variables in their forecasts, resulting in lower abnormal returns. Additionally, the findings reveal that sales growth and gross margin have a positive effect on abnormal returns in investor-earning growth expectation perspective portfolios, suggesting that investors may also underestimate the importance of these variables when forecasting earnings growth, resulting in higher abnormal returns.

Understanding these biases has critical implications for investment strategies, financial forecasting, and market efficiency. Investors can enhance decision-making frameworks by integrating insights from these biases into portfolio construction and valuation models. Analysts, in turn, can refine their forecasting methodologies by adjusting how they incorporate key financial variables into earnings projections, ultimately improving the accuracy of stock valuations.

At a broader level, this study underscores the importance of improving price discovery mechanisms in financial markets. By addressing forecasting inefficiencies, market participants can contribute to more efficient capital allocation, reduce valuation distortions, and foster a more transparent and balanced approach to growth stock assessment.

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