

Corporate Financing and Investments Decisions: Implications For Stock Selection Signals

Executive Summary

- In evaluating stocks, there tends to be a focus on growth and profitability metrics derived mainly from the income statement such as revenue, earnings growth, and profit margins.
- Alpha Quant has not found predictive value in past growth and profitability metrics, as pervasive reversion to mean dominates trend persistence. As this research illustrates, there has been a negative correlation between past business growth and future stock returns.
- A focus on management actions in the areas of investing (i.e., purchase and sales of long-term assets) and financing activities (i.e., shares issuance and repurchase, debt issuance and paydown, dividends) has been found by Alpha Quant to be more rewarding. Historically, these activities have significantly impacted stock returns and may be used as signals for stock selection.
- On average, companies that invest heavily in capital expenditures have recently experienced strong stock price appreciation and revenue growth, display high earnings expectations, and tend to issue equity or debt to finance their growth. These stocks significantly under-performed the market over the 1990-2021 period under study.
- Conversely, companies that repurchase shares display low revenue, capex and earnings growth expectations, tend to be dividend-payers and generate strong free cash flow. These stocks significantly out-performed the market over the same period.
- Investors seem to overestimate the expected return on capital investments. This underperformance following capital investments may be explained by “empire-building” management with less emphasis on creating shareholder wealth. Or it could be the result of optimistic extrapolation of sales growth and business trends. In either case, the actual achieved economic returns on invested capital fail to meet investors’ initial expectations and result in weaker stock prices.



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Analysis of Growth Factors

In evaluating stocks, there tends to be a focus mostly on growth and profitability metrics derived from revenue, earnings growth, and profit margins. This is perhaps related to a short-term focus on quarterly earnings reports and the long-established connection between earnings-per-share (EPS) and stock prices in simple valuation models based on price multiples. Other factors contributing to such a short-term focus include sell-side research forecasting of revenue and EPS and media attention to daily news potentially impacting individual firms or whole industries.

But does it reward investors to select stocks based mostly on growth metrics? Alpha Quant answers this question through empirical analysis of long-term corporate data. Specifically, the universe is mid- to large-cap, liquid, U.S. stocks over the 12/31/1990-06/31/2021 period. Factor portfolios are developed by ranking several well-known growth and profitability metrics and evaluate their ability to predict portfolio returns.

Figure 1. Excess Returns of Selected Factor Portfolios

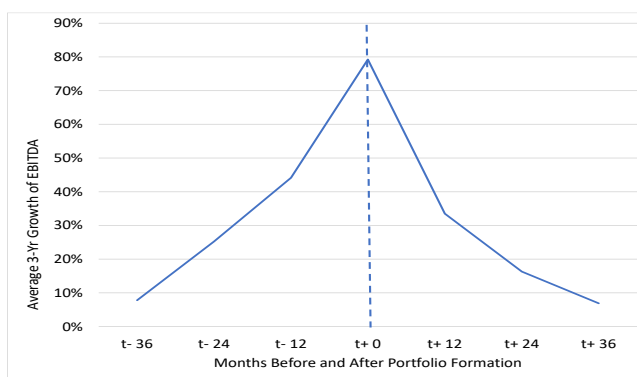
Factor	IC	Top Qtile	2nd	3rd	4th	5th Qtile
1-Yr Growth of Sales	-0.015	-0.60	-0.16	0.16	0.26	0.54
Cons LT Growth of EPS	-0.010	-0.53	0.11	0.17	-0.04	0.03
1-Yr Proj Growth of EPS	-0.009	-0.48	-0.10	0.05	-0.14	0.36
1-Yr Growth of Earnings	-0.006	-0.28	-0.09	0.02	0.22	0.32
3-Yr Growth of Sales	-0.001	-0.20	0.12	0.22	0.24	0.09
Change in EBITDA Mg	-0.001	-0.09	-0.07	-0.01	0.17	0.21
Net Profit Margin	0.001	-0.30	-0.23	-0.12	0.11	0.27
3-Yr Growth Earnings	0.002	-0.12	0.14	-0.04	0.23	0.21
Gross Profit Margin	0.006	0.33	-0.22	-0.11	-0.14	-0.05

Source: FactSet, Alpha Quant

Figure 1 reports the quarterly average excess returns of quintile portfolios over the equal-weighted universe. Portfolios are rebalanced quarterly. Transaction costs are not considered. The top (bottom) quintile is the portfolio of stocks which includes the top (bottom) 20% of the stocks with the highest ranked stocks based on a specific factor. The information coefficient (IC) is also reported for each factor. The IC is the correlation between the factor ranks and the future returns. It quantifies the predictive power of a factor. In context, a quarterly IC between 0.01-0.02 is decent, between 0.02-0.03 is good, and above 0.03 is excellent.

A negative IC indicates that the factor has a negative correlation with future returns (i.e., the higher the factor rank, the lower the returns). What is striking in Figure 1 is that most of the growth factors based on past growth exhibit a negative IC. As a result, the bottom quintiles have the higher returns (i.e., the portfolio with the bottom 20% of stocks ranked on 1-year % change in sales out-performs the universe by 54 bps per quarter. While the top quintile portfolio by trailing sales growth under-performs by 60 bps per quarter). Even the forward-looking consensus of long-term growth of EPS displays a negative IC with the top quintile under-performing by 53 bps per quarter. The only metric with a (barely) positive IC is the gross profit margin factor with the top quintile out-performing by 33 bps per quarter. While the tested factors only represent a limited sample and iterations of all possible growth factors, it is still emblematic of the lack of information (or better of counter-intuitive information) contained by the typical growth metrics generally employed to evaluate companies' prospects. The observed negative correlation between growth factors and future stock returns is due to the dominance of the reversion to mean phenomenon over the persistence of growth. Figure 2 illustrates an example of reversion to mean. It shows the average three-year change in EBITDA for the top decile of universe companies ranked by 3-year EBITDA growth at time t_0 . After a big spike, EBITDA decays sharply towards the initial level.

Figure 2. EBITDA (rowth For Top Decile Portfolio by Trailing 3-Yr EBITDA Growth (12/31/1990-06/31/2021)

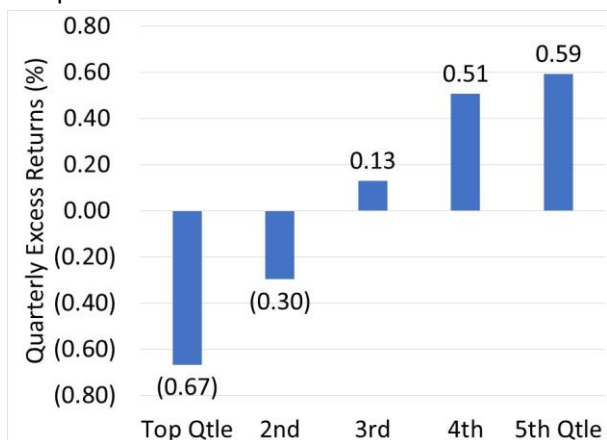


Source: FactSet, Alpha Quant. EBITDA: Earnings before interest, taxes, depreciation, amortization.

Capital Investments And Stock Returns

Management’s investment decisions are reported in the statement of cash flows and are referred to as Cash Flow from Investing Activities. These activities capture changes in capital expenditures (Capex) and long-term investments. Capex refer to the purchase of property, plant, or equipment assets (PPE). Long-term investments may include debt and equity instruments of other companies. Acquisitions of other businesses is also reported in this section. In this study we investigate how management’s decisions to invest in PPE (changes in Capex) is related to stock’s future returns. The universe is large-cap, liquid, U.S. stocks ex-financials over the 12/1990-06/2021 period. On a quarterly basis, companies are ranked based on the one year percent change in Capex and assigned into five quintiles. Each quintile portfolio contains on average 90 stocks. Figure 3 reports the average excess quarterly return over the returns of the stocks in the same universe.

Figure 3. Average Quarterly Excess Return of Quintile Portfolios Sorted on 1-Year Change in Capex



Source: FactSet, Alpha Quant

Figure 3 illustrates that the higher the investment in Capex, the lower the future stock returns, historically. These excess returns are highly economically significant. In addition, the quarterly excess returns appear symmetric, as the top quintile under-performs the benchmark by about the same amount (67 basis points per quarter) that the 5th quintile out-performs the universe (59 basis points).

Figure 4 reports the correlation values for the Capex growth factor with other factors. This table helps to understand the fundamental attributes of high Capex companies.

Figure 4. Factor Cross-Correlation

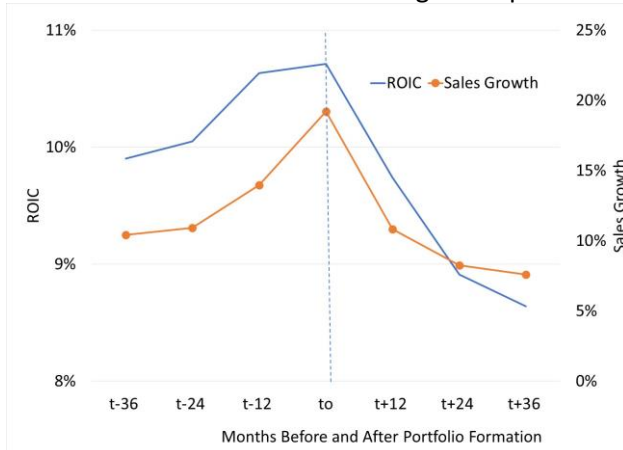
Factor	1-Yr Chg in Capex
1-Yr Chg in Sales	0.33
Capex/Assets	0.24
3-Yr Stock Return	0.23
EPS Analysts Revisions	0.06
Dividend/Assets	-0.03
Shares Buyback	-0.04
FCF-to-Assets	-0.09
Debt Paydown	-0.11

Source: FactSet, Alpha Quant

Historically, companies that invest heavily in Capex tend to display strong trailing sales growth, high capital intensity, strong 3-year trailing price appreciation and positive earnings expectations. They also, on average, issued debt or/and equity and tend to generate weak free cash flow.

Figure 5 shows that, historically, companies that invest heavily in capital expenditures do not, on average, generate attractive returns on invested capital (ROIC). Rapidly declining sales growth and decreasing economic returns seem to be the main source of their stocks’ severe under-performance.

Figure 5. ROIC and Sales Growth of The Top Decile Portfolio Based on One Year Change in Capex

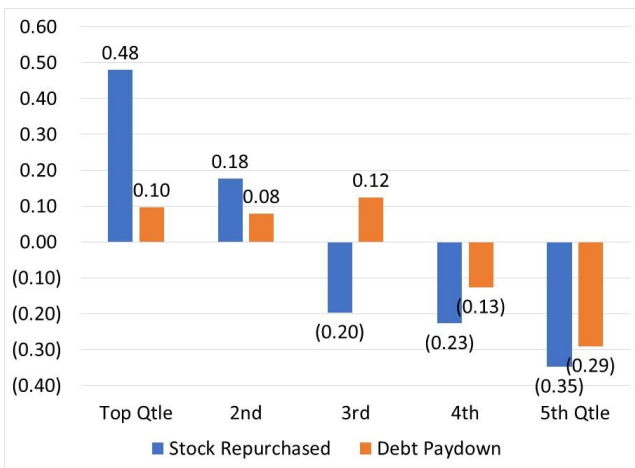


Source: FactSet, Alpha Quant

Share Buybacks And Stock Returns

Management’s financing decisions are reported in the statement of cash flows and are referred to as Cash Flow from Financing Activities. These activities capture changes in debt, equity issuance and repurchases, and dividend paid. In this study we focus on how changes in debt and equity issuance/buyback are related to stock’s future returns. The universe is mid –to large-cap, liquid, U.S. stocks ex-financials over the 12/1990-06/2021 period. On a quarterly basis, shares buyback is calculate as: cash used for shares repurchases minus cash raised from share issuance divided by total assets. Figure 6 reports the average excess quarterly return over the universe returns of the stocks in the same universe.

Figure 6. Average Quarterly Excess Return of Quintile Portfolios Sorted on Shares Buyback



Source: FactSet, Alpha Quant

Figure 6 illustrates that historically, the greater the stock buyback, the higher the future stock returns. As in the case of Capex, these excess returns are economically significant. In addition, most of the alpha is contained in the top quintile (48 basis points per quarter). Equally, the bottom quintile under-performs by a significant 35 basis points per quarter. The debt paydown factor shows less strength and it is more relevant to signal underperforming stocks with a bottom quintile’s excess return of negative 29 basis points per quarter.

Figure 4. Factor Cross-Correlation

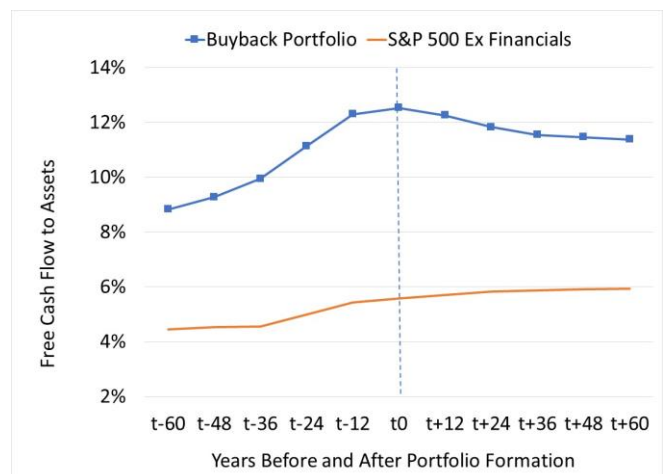
Factor	Shares Buyback
FCF-to-Assets	0.30
Dividend/Assets	0.22
3-Yr Stock Return	0.04
EPS Analysts Revisions	-0.00
Capex/Assets	-0.00
1-Yr Chg in Capex	-0.04
Debt Paydown	-0.07
1-Yr Chg in Sales	-0.13

Source: FactSet, Alpha Quant

Figure 4 reports the correlation values for the Shares Buyback factor with other selected factors. This table helps to understand the fundamental attributes of high buyback companies. Companies that significantly repurchase their shares generate strong free cash flow, tend to be dividend-payers, issue debt (often to finance the buyback), and have low growth of sales and capital expenditures.

Figure 7 shows that the main distinguishing factor of the buyback portfolio is the strong FCF generation which gradually increases in the years preceding the initial buyback and persists over the following five years. The buyback portfolio’s FCF as a percentage of assets remains consistently well-above the market average.

Figure 7. FCF-to-Assets For Top Quintile Buyback Portfolio and S&P 500 Ex Financials



Source: FactSet, Alpha Quant

Summary And Conclusions

This research has found that firms that invest heavily in Capex have well above-average past sales growth, have experienced recent strong stock price appreciation and display high long-term earnings growth expectations. However, these high Capex growth companies, on average, have historically disappointed investors with diminishing returns on invested capital.

Additionally, financing choices that are associated with increased Capex investment, such as equity or debt issuance, have generally resulted in negative future stock returns. Conversely, decisions associated with decreased investments, such as stock buybacks, generally resulted in positive returns.

There are a few potential reasons why increased investment expenditures may be viewed favorably. First, higher Capex may be associated with greater investment opportunities. Second, higher Capex may also indicate that the capital markets, which provide financing for the investments, have greater confidence in the firm and its management.

However, the empirical evidence shows that increased Capex result in negative stock returns, as high Capex firms do not meet lofty growth expectations and generate declining return on invested capital subsequently to their Capex increase.

Alpha Quant believes that investors fail to appreciate managements' incentive to exaggerate the merits of their firms touted capital investments. Such behavior may be driven by "empire-building" managers with little regard to shareholder wealth. Or it could be the result of optimistic extrapolation of sales growth and business trends. In either case the actual achieved economic returns on invested capital fail to meet investors' initial expectations and cause stock prices to fall.

An opposite story can be traced for companies that make financing decisions associated with decreased or low Capex investments, based on this study.

These companies deployed their cash to repurchase stocks and/or paydown debt. Growth expectations tend to be low for these companies. However, their free cash flow generation is high and increasing and tends to remain well-above the market average in the years following the buybacks, historically.

Alpha Quant believes these growing free cash flows may be interpreted as a signal to investors that the company is very likely to return cash to shareholders through both buybacks and dividends and less likely to misuse it towards unprofitable capital investments.



Massimo Santicchia is a Co-Founder and Managing Member of Alpha Quant Models LLC. Massimo has over 20 years of investment experience including: CIO at Alpha Quant Advisors, CIO at Cypress Trust Company, and VP of Investment Strategy at S&P Investment Advisory Services LLC. His expertise encompasses fundamental, quantitative analysis, portfolio management and investment strategy development.

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