Sell-Side Research: Do Analyst Recommendations Add Value for Investors?

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I.   Introduction

Sell-side firms and brokerage houses hire analysts to research public

newest available analyst recommendation data for the two indices and moreover, the first to look

at the S&P600 index.

The way in which this analysis will be con

gathered that smaller stocks inherently generate a greater return in comparison to larger stocks.

The premise behind this stems from the *Small Stock Effect* (*SSE*), a term coined by Banz (1981).

Banz determines that small cap stocks generate a greater risk-adjusted return in comparison to

large cap stocks because of their greater volatility and investment risk. Additionally, Lustig and

of solely small market capitalization stocks and the other comprised of the largest capitalization

stocks. They also find that even after adjusting for risk, small cap stocks yielded a greater return

than large cap stocks by a cumulative abnormal return of 20.65%, in comparison to only 1.53%.

It will be assumed for this paper that the *SSE* will hold.

In conjunction with the previous papers, but also expanding on the previous literature,

Kontio (2016) and Desai et al. (2000) add analyst recommendations to the small cap analysis.

Both examine the effect of stock returns on analyst recommendations between small and large

companies. Kontio (2016) determines that analysts who recommend strong buys or strong sells

for the different sized firms will see greater returns for the small cap companies over the large

cap ones from anywhere between 4%-19%. Moreover, in the study done by Desai et al. (2000),

th   -

returns at a 1% level.

stems from how recommendations are determined. This paper looks at all recommendations

during the specified period without particular qualifications. Contrastingly, Kontio uses buy and

sell recommendations only if the percentage of each rating is above 50% and Desai et al. only

picks renowned analysts and their recommendations. However, regardless of these differences in

approaches, it is evident that different variations of the *SSE* have been conducted and adding the

effect of stock returns on analyst recommendations does not change the results that small cap companies yield greater returns than large cap companies.

One of the explanations as to why investors rely more heavily on sell-side analyst recommendations for smaller firms in comparison to larger ones is because of *rational inattention*. This concept states that the average human only has a finite level of mental capacity to absorb information. This idea

and energy to devote towards making informed investment decisions. There is more readily avai

Based on the stocks included from both the small cap index and the large cap index, further data can be obtained. Using the Capital IQ software, pricing data will be gathered in a similar fashion to how analyst recommendations were obtained. Each company within the dataset has monthly stock price data within Capital IQ dating back two years. Once this is downloaded, monthly return data can be calculated by finding the difference between sequential months. Furthermore, the momentum, beta, smb, and hml ratios needed for the analysis will be found within the French-Fama online database (Fama and French 2019).[2] The data will be downloaded with monthly intervals to mirror the time frame for the other data gathered and combined with the pre-existing dataset to complete the information necessary for the analysis.

IV.   Models & Methods

This paper will run an OLS, multivariable regression model. The goal is to ultimately use a risk-adjusted return to accurately analyze whether analyst recommendations have a greater effect on small or large cap stocks within the identified industry. The initial step of the analysis will be to run a regression without any of the controlled risk factors. The purpose behind this is to determine whether ana2 0 3ench

returns, whereas as time elapses the stocks tend to become less noisy, leading to aeW⅋ṅBT/F1 12 Tf1 0 0 1 527.9

with these growth companies and the limited information available for investors

large cap companies, although buy ratings only result in small economic significance. Furthermore, the gradual improvement of results observed from a monthly analysis to a twelve-month analysis further proves the overarching idea that analysts have greater validity in their the ability to predict significant returns in the long-run, rather than the short-run, due to how noisy stocks are during a shorter period of time.

recommendations effect returns for investors. However, an interesting question worth raising as the analysis continues to progress is whether analysts have the ability to forecast through their recommendations instead of their recommendations causing the market to react. By seeing the results improve as the window for when returns are measured, one can argue that analysts have information regarding these smaller stocks for longer horizons that the market is unaware of. The evidence to support this claim is based on the findings within this analysis as there are no significant returns for large cap stockm0 g0 G(ba)4(se)3(d on the f)5(indi)-3(ngs)]TJETQq0.00000(JETa)4(nt)g

For the three-month window

more reliable 1% level   in contrast to the previous regression done in this phase. In comparison

to the three-month regression run without the CAPM risk factor included, these results yield

greater economic significance as the coefficient is much larger in the negative direction at -6.72.

It can now be interpreted that even controlling for the systematic risk of a stock, analysts who

recommend selling small cap stocks will see returns at -.0559 percentage points, accounting for

over the three months when analyst sell ratings increase by 1%. Furthermore, it is

important to note that the CAPM risk factor becomes statistically significant at the 1% level

when this regression is run. Interestingly, it should be expected that once the CAPM risk factor is

introduced there should be no statistical significance for these other variables. However, what is

observed is the opposite   the statistical significance remains robust. What this means is that

analysts are not just recommending high beta, or highly volatile, stocks, but rather stocks they

have knowledge of generating returns in the future.

Moving onto the six-

statistically significant, with the latter variable seeing a slight reduction in its economic

significance to -5.41. Similar

a statistically significant variable but with the coefficient in the opposite direction of what the

SSE would imply   further proving that even with a risk factor controlled for, analysts who still

recommend buying small stocks will see negative returns on investment. This result defends the

idea that small stocks are not as inherently risky as anticipated. It should be noted that the

al variable in the regression that is

statistically significant but only at a 10% level. The coefficient of 1.28 can be interpreted as an

analyst who recommends selling a large cap stock will yield positive returns of .0128 percentage

points over six months when buy ratings increase by 1%, which is not what would be generally

expected. This further builds upon the idea that analysts do not have the ability to provide greater

returns for large cap stocks in comparison to their smaller counterparts because of the readily

ava9(a)4 would be generally

the risk factors of Small minus Big, or difference between value and growth companies, and

High minus Low, or the difference in high book-to-market firms from low book-to-market firms.

In the monthly regression, as observed with just the CAPM risk factor regression, the

istically significant, but

analysis relies on for valid results. Consistently, the monthly returns regression fails to offer

evidence that suggests analyst recommendations are correlated with one-month returns, thus

supporting the idea analyst recommendations influence long-run returns instead.

In the three-

1% level; a common theme for the longer return data. Also consistent with an emerging pattern

is the fact that the economic significance continues to increase as more risk factors are

implemented into the regression. Now the analyst recommendation for selling a small cap stock

yields a negative 7.18% return for investors when controlling for the Fama-French risk factors.

Furthermore, it is important to note that when regressing the three risk factors on returns, the

CAPM and SMB variables are statistically significant at the 1% level, while the HML variable is

not. It is interesting to observe the HML risk factor is not significant as this infers that within this

-to-market and low book-to-market ratios may

have a slight effect on controlling for risk on returns for companies. However, because the

systematic risk of a firm, CAPM, and the difference in growth and value stocks, SMB, are

statistically significant yet no effect is seen, it can be inferred that, on net, the risk factors have

no influence on ractors have

comparison to the prior regression   an obvious

TABLE 4

other three regressions conducted within the full risk factor framework. What this can imply is that momentum does not influence returns for selling small cap stocks.

Transitioning to the three-month regression, a similar result is observed. Again, the statistically significant, and the economic significance drops as noticed in the previous risk factor regressions to again be r

positive economic results as its statistical significance suggests a positive return from

recommendations of buy ratings on small companies.   ant within

this model, proving once again from the interpretation of the coefficient that the *SSE* does not

hold for the long-run based on analyst recommendations. Furthermore

not register as significant within this timeframe, wher

as interpreted in all the risk factor inclusive regressions, analyst recommendations are correlated

with higher returns for small companies, regardless of whether the rating is a buy or sell and

have no effect on returns for large cap companies, regardless of the rating as well.

<u>TABLE 5</u>

However, once the six-month and twelve-month analyses were completed, more positive results accrued. For example, for the six-

significant in conjunction wi   -month regressions, every variable

progress, the idea that analysts are better at recommending small cap stocks rather than large cap ones becomes increasingly more prevalent.

Even with more risk factors included in the regression the effects of analyst recommendations on returns are still significant

analysis. What this means is that without controlled risk factors, the goal was to determine whether analyst recommendations would yield greater than expected returns for investors. Then, once the risk factors were gradually implemented into the models, the significance of analyst recommendations were expected to diminish as more risk factors were controlled for. However, what instead occurred was that as the risk factors were slowly included into each regression, the models still generated statistically significant results from analyst recommendations. This trend suggests that the risk factors included in the models, when compared to the initial regression with no risk factors, have no effect on the returns generated from analyst recommendations and that analysts do not suggest risky stocks

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