I. Executive Summary

Investor sentiment, namely investors' expectations regarding future price development in markets, stocks or industries, provides valuable information regarding market participants and enhances predictive ability for financial markets, especially when considering short-term horizons.

Classical Finance Theory is based on the principles of market efficiency and the rationality of investors who hold diversified portfolios, constructed by pricing assets based on the value of their expected cash flows and therefore excludes the impact of Investor Sentiment on the cross-section of stock returns. However, there exists a vast amount of research which underlines the significance of Investor Sentiment on asset pricing, stock price prediction and finally on market timing and signal generation particularly in the development of momentum investing strategies.

This thesis will investigate the impact that industry-level Investor Sentiment may effectuate on industry returns, in order to determine whether Investor Sentiment can affect the industry returns for consecutive days, as well as to assess whether Investor Sentiment can constitute a powerful explanatory variable in an asset pricing context.

The Fama-French factors result in strong explanatory power with respect to Industry returns. Hence, we will explore whether Investor Sentiment can enhance the explanatory power of the Fama French five factor asset pricing model (Market, Size, Book to Market, Profitability, Investment), when applied on daily and monthly returns on an industry level. Furthermore, we aim at examining the relationship between classical factor exposure and investor sentiment, by focusing on identifying and categorizing types of factor exposure that are more sensitive to changes in Investor Sentiment and may portray strong interactions with Investor Sentiment variables.

Finally, we will explore applications in portfolio construction by incorporating Investor Sentiment in investment strategies, in order to enhance portfolio returns beyond the level of returns that can be achieved with classical factors exposure.

The thesis will provide a literature review giving a holistic view on current state-of-the-art research on Investor Sentiment's effect on stock returns, respective asset pricing considerations and interaction between classical factors and Investor Sentiment. The data we will utilize in the empirical part, consist of Fama-French factors and returns measured on an industry level, as well as Industry Sentiment Indicators provided by Yukka lab [1]. The latter have been generated by employing NLP methods on a vast amount of daily news articles and subsequently assessing the information, grading with respect to positive or negative outlook and finally aggregating the different assessments on an industry level Sentiment indicator.

Harnessing the power of the provided data, we will employ econometric and statistical tools (correlation functions and linear regression) in order to assess the effects that Investment Sentiment indicators have on daily industry returns.

Subsequently, we will implement two regression models with interaction terms, using the 5 Fama-French factors and the Investor Sentiment indicators as explanatory variables. The interaction terms will help us identify whether significantly different coefficients for the Fama-French factors emerge based on different Investor Sentiment.

Finally, we will use the Sentiment indicators to produce an investment signal based on which industries have a positive or negative outlook and try different thresholds to define which indicators qualify as showcasing such outlook and hence can be included in our portfolio. Then, we will create a long/short strategy by taking long positions in industries with positive Sentiment and respectively, short positions in industries with negative Sentiment. We will also incorporate the strategy in a Fama French factors portfolio with equal weighting and assess whether this can be a valuable addition that enhances returns and reduces volatility.

Our findings indicate that Investor Sentiment does not showcase such a strong explanatory or predictive relationship with industry returns, to the extent that it would purpose a valuable addition to an asset pricing model. Moreover, the daily Sentiment does not appear to share significant correlations with the subsequent days.

However, the regression interaction models show some idiosyncratic effects in a number of industries, where different prevailing Sentiment can be associated with different regression coefficients and therefore leads to different sensitivity that the returns have with a subset of the Fama-French factors.

Finally, in the portfolio construction applications, we find that the Sentiment indicators can be used with moderate success as an investment signal. In particular, they can be deployed to recognize those industries with a strong outlook and, hence, investment opportunities on the long side of a strategy. In order to effectively distinguish such industries however, we need to apply strict criteria and essentially only use industries for which the indicators have very high or low values and hence show strong positive or negative Sentiment. When betting on industries for which the indicators are only mildly positive or negative, the investment returns are found to be poor relative to a market index.

The results derived from the implemented methodology are not characterized by homogeneity in the sense that clear and strong patterns, across all industries, did not emerge. However, a number of aspects analyzed showcase real potential and furthermore indicate that the Sentiment indicators indeed share associations with the industry returns and with the Fama-French factors, and more so that they successfully portray an increase/decrease in returns on days with positive/negative Sentiment.