

Connecting global and crypto commons

Common pool resources (CPR) are infamously assumed to be subject to the tragedy of the commons, i.e., their depletion over time caused by users acting in their own self-interest. The predominant approach to resolving this is privatization, following two lectures on the checks of population by William Forster Lloyd in 1833.

Later, however, Elinor Ostrom received the Nobel Prize in Economics in 2009 for demonstrating how communities can efficiently self-govern to prevent resource depletion – without privatization. Her work interestingly also finds wide application in the design of decentralized autonomous organizations (DAO), which are organizations run on the Ethereum blockchain, utilizing smart contracts. The connection arises because just as in self-governing communities, DAOs are virtual, self-organizing organizations without formal hierarchies.

Linking DAOs and global CPR (the natural environment), DAO Integral Platform for Climate initiatives (DAO IPCI) showcases how blockchain technology can contribute to offsetting negative externalities affecting the climate.

This study could further investigate how decentralized organizational setups can be utilized to govern (global) CPRs efficiently, e.g. via carbon markets.

Suggested Readings:

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge university press.

<https://cryptocommons.cc/>

<https://ipci.io/>

“Humans vs. Machines”: Textual and Content Analysis Techniques in Financial Context

The impact of information on investors’ decisions and hence on capital markets has occupied minds of both academic researchers and practitioners for a very long time. Besides the influence of “hard” information such as earnings releases on stock prices, recent research investigates the importance of “soft” information such as linguistic features and tone of reports and statements issued by companies. While classical procedures of sentiment classification in natural language processing are based on dictionaries developed with subjective opinion of individual researchers, the recent breakthroughs in machine learning techniques allow to analyse the linguistic content of reports without human assistance. The object of this research project is to examine the most common techniques of natural language processing in terms of their advantages and disadvantages for applications in financial context as well as to find evidence whether the machine-learning-based approaches of sentiment measurement outperform the procedures that rely on human perception of linguistic features.

Recommended starting points in the literature could be Garcia et al. (2020), *The Colour of Finance Words*, *University of Colorado at Boulder - Leeds School of Business Working*

Paper, Loughran and McDonald (2020), Textual Analysis in Finance, University of Notre Dame Working Paper.

ESG Dose Against COVID-19: Does ESG Exposure Give Your Portfolio an Edge in a V-shaped Stock Market Recovery?

Besides one of the most serious health crises in almost a century, the year 2020 has seen one of the worst sellouts on global financial markets in history. The COVID-19 pandemic changed the landscape of many industries and businesses, dividing large established as well as small and growing companies into “winners” and “losers”. While there is little uncertainty regarding the class of industries that gained in terms of market valuations from several lockdowns and significant restrictions of our normal, “pre-pandemic” lives, the recent research investigates the significance of ESG performance of companies in outperforming their peers on financial markets. Since the evidence of several studies is quite controversial, this research project should look into methodological approach that could clarify whether exposure to more socially and environmentally responsible companies served as outperformance factor for investors during last year’s V-shaped stock market recovery irrespective their industry affiliation. Recommended starting points in the literature could be Cheema-Fox et al. (2020), *Corporate Resilience and Response During COVID-19, Harvard Business School Working Paper 20-108*; Glossner et al. (2020), *Where Do Institutional Investors Seek Shelter when Disaster Strikes? Evidence from COVID-19, ECGI Working Paper Series in Finance*; Albuquerque et al. (2020), *Resiliency of Environmental and Social Stocks: An Analysis of the Exogenous COVID-19 Market Crash, European Corporate Governance Institute – Finance Working Paper No. 676/2020*

Does earnings conference call content predict future firm performance? An empirical analysis for the U.S.

Description:

In the U.S., it is common that firms host earnings conference calls. In these calls, the firm’s executives first give a presentation which is followed by a question and answer session. Since the introduction of the Regulation Fair Disclosure (FD), firms typically provide transcripts of these conference calls. Matsumoto et al. (2011) use a sample of more than 10,000 transcripts of conference calls to examine the information content of the presentation and the question and answer part of the call. They find that both parts contain valuable information. However, the discussion segment is relatively more informative than the presentation. This result suggests that active analyst involvement in conference calls increases the information content of the call.

Druz et al. (2015) analyze the tone of earnings conference calls and find that stock prices react significantly to managers’ tone in conference calls. Furthermore, they find that the tone that is not explained by current economic performance predicts the firm’s future earnings.

Davis et al. (2015) show that the tone of earnings conference calls contains a manager-specific component, i.e. some managers have the tendency to be optimistic while others are on average more pessimistic.

This topic builds on this literature and asks whether the content of earnings conference calls is predictive for future firm performance. For example, does more positive tone or less vague information predict higher future earnings (surprises)? Is conference call content predictive for future stock returns? Which parts of the earnings conference and the contributions of which participants are most informative?

In this master thesis, the student should first summarize the literature analyzing earnings conference call content. In the second part, the student should empirically analyze the verbal information provided in conference calls. This task comprises collecting and editing the call transcripts (e.g., identifying the speeches of each call participant) and running a textual analysis. The student should test whether call content predicts firms' future earnings (surprises) and future stock returns. In the analyses, the student should also analyze which parts of the conference call and whose contributions (e.g., CEO, CFO, analysts) are most informative.

Requirements:

All standard databases like CRSP (stock market data) and Compustat (accounting data) are available via WRDS. Conference call transcripts can be obtained via SeekingAlpha. Basic knowledge (or ability/willingness to acquire basic knowledge) in econometrics and statistic software (e.g., Stata, R, Python) is required for empirical study. Previous experience with empirical analyses is helpful.

Reference Literature:

Davis, A., W. Ge, D. Matsumoto, and J. Zhang, 2015. The effect of manager-specific optimism on the tone of earnings conference calls. Review of Accounting Studies 20, 639-673.

Druz, M., A. Wagner, and R. Zeckhauser, 2015. Tips and tells from managers: How analysts and the market read between the lines of conference calls. NBER working paper.

Matsumoto, D., M. Pronk, and E. Roelofsen, 2011. What makes conference calls useful? The information content of managers' presentations and analysts' discussion sessions. Accounting Review 86, 1383-1414.

Loughran T., and B. McDonald, 2011. When is a liability not a liability? Journal of Finance 66, 35-65.

Loughran T., and B. McDonald, 2016. Textual analysis in accounting and finance: A survey. Journal of Accounting Research 54, 1187-1230.

Investors' reaction to news – Empirical evidence from the U.S. stock market

Description:

In the beginning of 2021, an alarm bell rang among Wall Streets hedge funds and institutional investors. An army of amateur traders, following the gang of traders coordinating moves on Reddit, have shaken up markets. GameStop is the first stock that has been sent flying and soon after, the impact has been spread to other stocks.

Investors' reaction to news have been a burning topic for a couple of years. Many researchers investigated the topic and found interesting results. Wang et al. (2018) find that buying stocks with the most positive and shorting stocks with the most negative news is associated with positive future abnormal returns. This result suggests that investors do not fully incorporate news into prices. While Wang et al. (2018) differentiate between good and bad news, Tetlock (2011) analyzes investors' reaction to new and old information. He finds that there is a return reversal after stale news indicating that investors do not properly identify old news and react to news that has already been incorporated into prices.

In this master thesis, the student should review the literature on investors' reaction to (public) news. Next, the student should extend the results, for example, by analyzing investors' short-term (daily instead of monthly time frequency) reaction and by differentiating between news sources (e.g., newspapers, newswires, and social media).

Requirements:

All standard databases like CRSP (stock market data) and Compustat (accounting data) are available via WRDS. Basic knowledge (or ability/willingness to acquire basic knowledge) in econometrics and statistic software (e.g., Stata, R, Python) is required. Previous experience with empirical analyses is helpful.

Reference Literature:

Chan, W. S., 2003. Stock price reaction to news and no-news: drift and reversal after headlines. Journal of Financial Economics 70, 223-260.

Hillert, A., H. Jacobs, and S. Müller, 2014. Media makes momentum. Review of Financial Studies 27, 3467-3501.

Roll, R., 1988. R-squared. Journal of Finance 43, 541-566.

Tetlock, P. C., 2011. All the news that's fit to reprint: Do investors react to stale information? Review of Financial Studies 24, 1481-1512.

Tetlock, P. C., 2014. Information transmission in finance. Annual Review of Financial Economics 6, 365-384.

Wang, Y., B. Zhang, and X. Zhu, 2018. The Momentum of News. Working paper.

Measures for volatility – a replication:

“In this article, the authors find that a typical application of volatility-timing strategies to the stock market suffers from look-ahead bias, despite existing evidence on the success of the strategies at the stock level. After correcting this bias, the strategy becomes very difficult to implement in practice because its maximum drawdown is 68%–93% in almost all cases. Moreover, the strategy outperforms the market only during the financial crisis period. The authors also consider three alternative volatility-timing strategies and find that they do not outperform the market either. Their results show that one cannot easily beat the market via timing the market alone.” (Liu, 2019)

This paper primarily deals with identifying a forward looking bias in Moreira et al. (2017) top publication. In order to rectify their mistake, the authors look for alternative volatility measures. Your job would be to replicate their paper in python.

Requirements:

Working understanding of - or high interest in python

References:

Liu, F., Tang, X., & Zhou, G. (2019). Volatility-Managed Portfolio: Does It Really Work?. The Journal of Portfolio Management, 46(1), 38-51.

Moreira, A., & Muir, T. (2017). Volatility-managed portfolios. The Journal of Finance, 72(4), 1611-1644.

Volatility managed portfolios – What about other factors? :

“Managed portfolios that take less risk when volatility is high produce large alphas, increase harpe ratios, and produce large utility gains for mean-variance investors. We document this for the market, value, momentum, profitability, return on equity, investment, and betting-against-beta factors, as well as the currency carry trade. Volatility timing increases Sharpe ratios because changes in volatility are not offset by proportional changes in expected returns. Our strategy is contrary to conventional wisdom because it takes relatively less risk in recessions. This rules out typical riskbased explanations and is a challenge to structural models of time-varying expected returns.” (Moreira, 2017)

This brilliant paper has received a lot of attention. A lot of it rather ambivalent. Cederburg et al. (2020) check, whether the author’s principle of volatility managed portfolios can be applied to a broad range of anomaly factors. Picking some of them and cross-checking their results would be your job in a master thesis.

Requirements:

Working understanding of - or high interest in python

References:

Moreira, A., & Muir, T. (2017). Volatility-managed portfolios. The Journal of Finance, 72(4), 1611-1644.

Cederburg, S., O’Doherty, M. S., Wang, F., & Yan, X. S. (2020). On the performance of volatility-managed portfolios. Journal of Financial Economics, 138(1), 95-117.