

Summary of *From Man vs. Machine to Man + Machine: The art and AI of stock analyses*

Sean Cao, Wei Jiang, Junbo Wang, Baozhong Yan(JFE 2024)

2024.11.06 Citattoo

1. What are the research questions?

- Can we build an AI analyst to compete with professional analysts?
- Do human analysts have comparative advantages over AI?
- What is incremental contribution of analysts to man-machine synergy?

2. Why are the research questions interesting?

- humans can leverage their advantage for better adaptation to the growing AI prowess.

3. What is the paper's contribution?

- Introduces a method to forecast corporate policies using AI.
- Contribute to literature that build assess the performance of ML in finance.
- Contributes to the understanding of AI's role in economic research, especially in corporate finance.

4. What hypotheses are tested in the paper?

- H1: The AI investment score positively predicts future capital expenditures.
- H2: The AI investment score is negatively associated with future abnormal returns.

a) Do these hypotheses follow from and answer the research questions?

- Yes.

b) Do these hypotheses follow from theory? Explain logic of the hypotheses.

- AI's ability to analyze and interpret textual data might reveal insights into management's future investment intentions that are not fully incorporated into current stock prices
- the market, upon realizing these investment plans, may adjust stock prices accordingly, leading to abnormal returns. A negative association would suggest that the AI score contains forward-looking information that the market has not fully priced in, and thus, it has predictive power for future returns.

5. Sample: comment on the appropriateness of the sample selection procedures.

- The study's focus on stock returns rather than earnings or other financial metrics is well-justified, given the growing importance of price targets in investment decisions. This relevance aligns with the evolving priorities of financial markets and investors.
- This sample selection is appropriate for achieving reliable results in identifying long-term predictive factors.

6. Comment on the appropriateness of variable definition and measurement.

- The model's lack of transparency in deriving investment scores from text is a concern.

7. Comment on the appropriateness of the regress/predict model specification.

- The model might not account for all complex factors influencing corporate decisions.

8. What difficulties arise in drawing inferences from the empirical work?

- While machine learning can offer high predictive accuracy, there are challenges regarding interpretability, especially in the context of the science of science . The lack of interpretability raises concerns about bias and fairness, as machine learning models may include and reproduce biases embedded in the data in non-transparent ways. This lack of transparency can hinder the ability to draw clear, unbiased inferences from the empirical results.

9. Describe at least one publishable and feasible extension of this research.

- Build a real-time monitoring system to detect anomalies in advance.