Summary

From Transcripts to Insights: Uncovering Corporate Risks Using Generative AI

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1. **What are the research questions?**
   - Can generative AI help investors uncover firms' regulatory, environmental, and AI-related risks?
2. **Why are the research questions interesting?**
   - Corporations face multifaceted risks that extend far beyond traditional financial metrics
     - Regulatory, environmental, and AI risks have strong implications for growth and stakeholder value.
   - Generative language models particularly attractive in the analysis of corporate risk
     - Could go beyond the given text by leveraging general knowledge acquired from related documents.
     - Could extract information into coherent, understandable narratives
3. **What is the paper's contribution?**
   - Contribute to a nascent and actively developing body of work on the value of LLMs
     - Prior studies: Use generative LLMs for other purposes, such as analyzing complex, unstructured information(Kim et al.)
   - Contribute to literature that uses corporate disclosures to construct firm-level measures of risk exposure
     - Prior studies: Rely on topic-based bigram dictionaries. Hassan et al. (2019) construct overall political risk by defining training libraries of political text and nonpolitical text.
     - Extension: Use AI-based technology to analyze risks, which can understand the deeper context
   - Contribute by establishing the value of general AI for understanding complex topics like risk
     - Prior studies: Limited to the information contained within the text.
     - Extension: Show LLMs can use general knowledge to analyze firm risks from given context.
4. **What hypotheses are tested in the paper? list them explicitly**
   - H1: If GPT based risk mreasures are valid, there will be some risk-related capital market consequences
   - H2: If GPT based risk mreasures are valid, it could predict firms' actions.

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

   (b) **Do these hypotheses follow from theory or are they otherwise adequately developed? Please explain the logic of the hypotheses (use visualization if possible)**
   - H1:
     - A valid measure of risk must exhibit association with volatility (Engle, 2004).
     - We use two forward-looking firm-level volatility metrics: implied volatility derived from option prices(Sautner et al., 2023), and abnormal realized volatility(Loughran and McDonald, 2014).

- H2:
  - In theory, riskier firms experience higher financing costs and value the option of waiting (Dixit and Pindyck, 1994).
  - However, for technology-related risks, the effect is less clear because addressing AI challenges requires significant investments in new technology.

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

   They can enlarge the window and conduct random sampling to increase credibility.

6. **Dependent and independent variables: comment on the appropriateness of variable definition and measurement (focus on the key dependent variables and independent variables)**

   - Independent variable: Using the ratio of processed to original text length directly as a proxy indicator for risk is not sufficiently convincing.
   - Both dependent variables in the regression has ample literature support.

7. **Regression/prediction model specification: comment on the appropriateness of the regression/prediction model specification**

   - Conduct industry and time fixed effects and industry $\times$ time fixed effects reasonably.

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

   - Effectiveness outside GPT's training period
   - 2018.1-2023.3 is a short window, and most of this period is during the COVID-19 pandemic, which may lead to bias.

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

   - Other information receiver: fund managers, analyst
   - Use chatgpt4

参考文献

Alex G. Kim, Maximilian Muhn, and Valeri V. Nikolaev. Bloated disclosures: Can chatgpt help investors process information?

Tarek A Hassan, Stephan Hollander, Laurence Van Lent, and Ahmed Tahoun. Firm-level political risk: Measurement and effects*. 134(4):2135–2202, 2019.