Summary of Kim et al. (2023)

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1) What are the research questions?
Whether generative AI technology can help stockholders analyze corporate risk and make more informed decisions in the face of growing uncertainties.

2) Why are the research questions interesting?(research motivation)
In an era of political instability, climate uncertainty and rapid technology change, corporations face multifaceted risks. It's interesting to figure out whether the new generation of language model can extract richer and more nuanced understanding of corporate risks from textual data.

3) What is the paper's contribution?

   – First:
       * There is a nascent and actively developing body of work on the value of LLMs (see Bernard et al., 2023; Lopez-Lira and Tang, 2023;...);
       * Kim et al. (2023) contributes to them by showing that AI tools are effective at extracting information about diverse risk categories.

   – Second:
       * Recent literature uses corporate disclosures to construct measures of risk exposure: political (Hassan et al., 2019), country (Hassan et al., 2021)...
       * Kim et al. (2023) complements and builds on this influential work by adopting AI-based technology to analyze risks.

   – Third:
       * Kim et al. (2023) shows that LLMs successfully leverage their general knowledge to derive insights about corporate risks from a given context. These insights go beyond the information discussed before[1].

4) What hypotheses are tested in the paper? list them explicitly.
H1: There are associations between GPT-based risk proxies(Political, climate and AI) and previously introduced volatility variables.
H2: GPT-based measures can explain firms' economic decisions such as capital investment decisions.

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

   b) Please explain the logic of the hypotheses.
   H1 shows that GPT technology can accurately identify corporate risks and H2 furtherly tells us that GPT-based measures are economic useful and can help firms make decisions.

5) Sample: comment on the appropriateness of the sample selection procedures.
This paper focuses on US firms' transcripts available between January 2018, because this time period is characterized by significant changes in political, climate and AI

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[1]The evaluation of firm risks through textual analysis of corporate disclosures received substantial attention in recent literature (see Hassan et al., 2019, 2021; Chava et al., 2022;...). A distinctive feature of these studies is the utilization of dictionary-based bigram (n-gram) frequencies to quantify various risk types.

uncertainty, I think so. But it's better if Kim et al. (2023) can research on more kinds of textual disclosures and longer time window.

6) Comment on the appropriateness of variable definition and measurement.
Independent variables: Kim et al. (2023) uses GPT-based functions to identify *RiskSum* and *RiskAssess*, and captures political, climate and AI risk, but the standard is relatively vague.
Dependent variables: Kim et al. (2023) uses implied volatility and abnormal volatility and Investment which are introduced previously, it's relatively appropriate.

7) Comment on the appropriateness of the regression/prediction model specification.
Kim et al. (2023) controls fixed effects and std.errs are clustered at firm-level, meanwhile three kinds of risk proxies are specified correctly, I think these regression models are appropriate.

8) What difficulties arise in drawing inferences from the empirical work?
As GPT3.5 contains information before 2021-09, the empirical results based on 2018-2023 data are not correct.

9) Describe at least one publishable and feasible extension of this research.
Kim et al. (2023) can use more kinds of textual message such as company reports, relative news and other interesting disclosures to research firms' risks in more dimensions.