Discussion - ChatGPT and Corporate Policies

Jha et. al.

Aakash Kalyani
Federal Reserve Bank of St Louis[1]

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Summary of the paper.

- ▶ Big Question: How to measure expectations of future corporate policies (esp. investment)?

- ▶ Idea: ChatGPT + earnings conference calls.

- ▶ Method: A prompt!

  The following text is an excerpt from a company's earnings call transcripts. You are a finance expert. Based on this text only, please answer the following question. *How does the firm plan to change its capital spending over the next year? There are five choices: Increase substantially, increase, no change, decrease, and decrease substantially. Please select one of the above five choices for each question and provide a one-sentence explanation of your choice for each question. The format for the answer to each question should be "choice - explanation." If no relevant information is provided related to the question, answer "no information is provided."*

What they find?

- ▶ ChatGPT output predicts changes in investment (esp over near term - 4 qtrs).
- ▶ Correlated with CFO surveyed expectations of investment plans.

Great data + Intuitive Methodology + lots of validation

1. **Great data**: Earnings conference calls 4K US listed firms every quarter.

   - Multi-dimensional: presentation and Q&As.
   - Increasingly used in accounting, economics and finance as source of firm level data.

2. **Simple and intuitive**: 'prompt-based' classification – interpretable application of AI.

   - This will be copied.

3. Lots of careful comparisons with non-textual data.

My Take

- Important to understand **the role of prompt** in the correlation of ChatGPT output and investment rate.

▶ I took 10 randomly sampled excerpts from earnings calls.

▶ Removing top 3 sentences from the prompt resulted in no change in the classification.

▶ Great! Results not sensitive to prompts.

▶ Concern: Output from a model which is not really tailoring the response to the exact question.

▶ Researchers might not be able to control false positives and negatives.

Prompt:

The following text is an excerpt from a company's earnings call transcripts. You are a finance expert. Based on this text only, please answer the following question. *How does the firm plan to change its capital spending* **over the next year***? There are five choices: Increase substantially, increase, no change, decrease, and decrease substantially. Please select one of the above five choices for each question and provide a one-sentence explanation of your choice for each question. The format for the answer to each question should be "choice - explanation." If no relevant information is provided related to the question, answer "no information is provided."*

My comments (2/3): What is ChatGPT really picking up?

- ▶ Author's validation of: 1) Investment policy, 2) Timing.

	(1) (n=3)	(2) (n=4)	(3) (n=5)	(4) (n=6)	(5) (n=7)	(6) (n=8)	(7) (n=9)	(8) (n=10)
	Capital Expenditure$_{t+n}$							
ChatGPT Investment Score$_t$	0.804*** (13.88)	1.044*** (18.29)	0.998*** (16.48)	0.788*** (13.96)	0.626*** (10.86)	0.663*** (11.96)	0.493*** (9.05)	0.315*** (5.56)

- ▶ Similar results with overall sentiment in earnings calls.

	(1) n= 1	(2) n= 2	(3) n= 3	(4) n= 4	(5) n= 5	(6) n= 6	(7) n= 7	(8) n= 8	(9) n= 9	(10) n= 10
	Capital Expenditure$_{i,t+n}$									
Pct. Sentiment (Pos - Neg)$_{i,t}$	0.134*** (0.027)	0.181*** (0.033)	0.235*** (0.034)	0.214*** (0.034)	0.173*** (0.037)	0.180*** (0.037)	0.162*** (0.036)	0.130*** (0.037)	0.115*** (0.037)	0.058 (0.036)
Pct. Risk$_{i,t}$	−0.057** (0.028)	−0.044 (0.032)	−0.054 (0.034)	−0.044 (0.036)	−0.091** (0.038)	−0.078** (0.037)	−0.025 (0.042)	−0.036 (0.043)	−0.059 (0.040)	−0.034 (0.041)

- ▶ Two potential issues: 1) general sentiment. 2) Timing of general discussion in EC.

My comments (3/3): Beyond prediction - how? why? (another paper?)

- ▶ Can we understand and classify how are firms increasing capital expenditures?
  - ▶ 50-70% of capital expenditures is for repair and maintenance. (Duke-FRB Survey)
  - ▶ Other margins seem to be more interesting.
- ▶ What are executives reasons for increasing or decreasing capital expenditure policies?
  - ▶ Understanding the effects of policies directly.

At this point, we expect total capital spending next year of approximately \$11 million, primarily to get Nashville reopened and also adding some additional WiFi capability and other facility improvements at Dover International Speedway.

- Dover Motorsports Inc (2021)

Commodity prices have been very volatile and the industry has seen a continued softening in the U.S. drilling activity as companies exercise disciplined capital spending.

- Unit Corp (2019)

My take!

1. Prompt engineering: more justification for the prompt.

2. More insight into what ChatGPT is really picking up.

3. Go beyond prediction! how and why of investment policies. (Maybe another paper)