Discussion of “When Machine Comes to Town: Fund Analysts’ Performance with Artificial Intelligence ”

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I like the paper

- **Important question**
  - How AI affects humans
  - Machine vs. Man or Machina + Man? How do humans adapt?

- **Interesting setting**
  - Importance of the mutual fund industry
  - Influence of Morningstar ratings on investors and fund managers

- **Design features**
  - Introduction of machine ratings as a natural experiment
  - Tests of pillar ratings and analyst reports

- **Economically meaningful results**
  - Improvement in human ratings (68.8 basis points in annual return)
  - Consistent results from textual analysis of analyst reports

Some thoughts (or confusions)

- Extant literature and incremental contribution
- Other effects on analysts' ratings
- Arguments and tests for the disciplinary channel
- Tests of the learning channel and cross-sectional tests
- Design of the event study

Extant literature and incremental contribution

- Broader literature on effects of new technology on humans
- Line of research on effects of AI and big data in the financial industry
  - Equity analysts, fund managers, loan officers, rating agencies, etc.
- General findings (not always) from prior research
  - Disruptions to labor market (machine vs. man)
  - Humans move to tasks they are good at (adaptation)
  - Complement each other (machine + man)
- Incremental contribution: fund analysts (event study), the channels (disciplinary), and analysis of detailed reports

Other effects of AI on analysts

- Relative advantages of AI and human:
  - AI: public, hard information; diverse sources; no cognitive bias
  - Human: private, soft information; social; new funds; innovation
  - Complements: machine + man

- Introduction of AI could also affect ratings through:
  - Analyst turnover
  - Matching between analysts and funds
  - Allocation of resources and efforts
  - Market demand and analyst compensation

Arguments and tests of the disciplinary channel

- Arguments: AI reduces analysts' optimistic bias for socially connected funds
  - Career concerns about being replaced by AI
  - AI ratings making bias more visible

- Does the optimism for those funds reflect bias or information?
  - Social connection brings private information – even more important after AI comes
  - Analysts self-select to cover funds they are optimistic about
  - Test the impact of the optimism on performance?

- Are AI ratings less optimistic for these funds?
  - Matched fund analysis
  - Self-construct AI ratings based on Morningstar algorithms for human-covered funds

- Directly link ratings performance to the reduction in optimism for these funds?

Tests of the learnings channel and cross-sectional tests

- Learning channel: analyst ratings improve more when AI covers more funds in the same fund category
  - Hard to attribute to learning only – competition and discipline have a similar effect
  - Analysis of analyst report content might be helpful

- Cross-sectional tests: AI has a stronger effect on more experienced and better performing analysts
  - Some difficulty in interpreting these results
  - Tests of their skill sets: substitute or complement for AI?
  - Tests of what they have changed: hard vs. soft information, coverage selection, etc.

Design of the event study

- Events:
  - 02/2015: internal circulation of snapshots
  - 06/2016: soft launched for U.S. subscribers
  - 06/2017: officially launched [Event used in the current design]
- Analysis of earlier events can be helpful
  - Strengthen the tests of the total impacts
  - Distinguish between different channels
  - Examine local vs. foreign investors
- Need of a control group: pre-post tests are vulnerable