

**Discussion on**  
**“The Promises and Pitfalls of Robo-Advising”**  
**by D’Acunto, Prabhala, and Rossi**

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## Summary and Outline

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- Main Results:
  - On adoption (who adopt?)
  - On the impacts (before vs. after among adopters)
    - ✓ Diversification
    - ✓ Trading and performance
    - ✓ Behavioral biases
  
- Outline of my talk:
  1. Big picture question: the economics of robo-advising
  2. Welfare implications (and how to empirically assess them)
  3. Empirical findings (identification issues and others)
  4. Interpretation: plausible mechanisms for the changes
  5. Institutional background



## Comment 1. The Economics of Robo-advising

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- Comparing robo vs. human advisors
  - Incentives (potential conflicts of interest)
  - Human biases and cognitive limitations
  - Convenience in implementation
  - Economy of scale
  - ...



## Comment 1. The Economics of Robo-advising

- ❑ Incentives
- ❑ The “phishing equilibrium”
  - *Phishing For Phools*, Akerlof and Shiller, 2016
  - Free markets, with their incentives to produce what people want, can deliver a cornucopia;
  - On the other hand, they also create an equilibrium that is highly suitable for enterprises to manipulate and take advantage of human weaknesses to maximize profits.
  - E.g., brokerage firms design products to induce excessive trading in order to maximize brokerage fees.
- ❑ Now, think about the diversification tool in this study
  - A true disciple of Markowitz → passive investment → no trade
  - The opposite of what a brokerage firm would like to see
  - Understanding these incentives would be important



## Comment 2. Welfare Implications

- The **normative** question: what is *the optimal* advice we should give investors?
  - Very hard one. No consensus after several decades of research. Conclusions depend on assumptions and approaches.
  - In practice, some investment advice tools are based on concepts from Markowitz's Portfolio Theory and take a passive approach, while others incorporate active management.
- The **positive** question: can a given advising tool improve the status quo for investors?
  - The approach of this paper.



## Comment 2. Welfare Implications

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- The right empirical metrics for assessing welfare gain/loss
  - After-fee Sharpe ratio
  - The paper finds that (for certain groups) portfolio volatility ↓ and market adjusted return ↑, but fees also ↑.



## Comment 3. Empirical Findings

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### □ Identification issues

- Selection on *need to change* and *willingness to change*. Concerned that these people will make changes anyway without the robo-advisor.
- This paper proposes an **identification strategy**:  
*promotion phone calls: reached vs. missed*
- This is a clever one, but there are still remaining issues – the missed ones are not randomly missed; I *choose* not to answer phone calls from the broker because I don't want to listen to the advice.



## Comment 3. Empirical Findings

- Now, back to the results without instrument

Diversification	# stocks	↑ for the under-diversified
	portfolio vol	↓ for the under-diversified
Trading and Performance	mkt-adj ret	↑ for the under-diversified
	fees	↑ for the diversified
	logins	↑
Behavioral Biases	several kinds	generally ↓



## Comment 3. Empirical Findings

- What alternative forces can possibly drive these changes?
  - ① Person-specific effects
    - Can be taken care of by taking a single difference (as the authors have done)
  - ② Time-specific effects (e.g., time trend in investor behaviors, potentially related to market conditions)
    - Suggestion: may construct a matched sample from the non-adopters and look at the diff-in-diff
  - ③ Person  $\times$  time effects (e.g., more active investors are more likely to react to certain market conditions that have been going on during this period)
    - Would be hard to address without proper identification strategies



## Comment 4. The Mechanisms

### □ What are the plausible channels for the observed changes?

➤ Results on diversification are in line with our intuition

➤ Returns

➤ Trading activities (fees)

➤ Attention (log-ins)

May due to the excitement of having a new tool. Can these effects last?

➤ Behavioral biases

- e.g. disposition effect
- preference-based explanations

I struggle a bit to see why these changes happen after a one-shot recommendation on diversification

### □ Suggest the authors to better understand the mechanisms



## Comment 5. Institutional Background

- More background information would be helpful to understand and interpret the empirical findings
  - The black box of the robo-advising tool
    - What functions does it perform (customized recommendations or not? does it consider investors' risk profile or preference?)
    - How specifically does it make the recommendations (maybe show a snapshot of the interface)?
    - Implementation methods? ...
  - Institutional background of the traditional financial advisory vs. digital advisory industry in India
  - Retail investors in India



## Other Minor Comments for the Authors

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- ❑ It is not quite clear how portfolio performance and single trade performance are calculated. Net of fees? Using the actual holding period or hypothetical returns over a certain horizon?
- ❑ I don't think there is consensus that disposition effect is due to gambler's fallacy (mistakes in belief). Actually, leading and prevalent explanations are all based on preferences (realization utility, prospect theory)



## Conclusions

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- ❑ Highly important and relevant topic. Being the first one to empirically tackle this question, this paper deserves a lot of credit.
  
- ❑ Present a set of interesting findings.
  
- ❑ Suggest the authors to
  - Sort out the incentives of related parties and their implications;
  - Better understand the mechanisms underlying the documented changes;
  - Provide more background information and contexts for the readers.