Measuring financial advice: aligning client elicited and revealed risk

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The Financial Wellness Lab

People:

- Western University: Matt Davison, Nathan Phelps, Cristián Bravo Roman, Jet (Yuhao) Zhou
- Laurier: **Leon (Longlong) Feng, Adam Metzler,** Jack Pentesco, **R. Mark Reesor**
- Ivey Business School: **Chuck Grace**, Andrew Sarta, Poornima Vinoo

Partners:

- Foureyes Financial: Kendall McMenamon, Lucas Loughead, Philip Patterson, Lori Weir
- Private Canadian financial investment dealership

Funding: Mitacs, Fields Institute, NSERC, Laurier, Western

Motivation: investment suitability

- Retail investors hire financial advisors to select and manage investments.
- Advisors on-board clients to understand the client's investment objectives.
- Advisors must provide advice/products **suitable** for each client.
- Ontario Securities Commission regulates suitability through
  - Know Your Client (KYC), and
  - Know Your Product (KYP).

Behavioural finance: elicited and revealed risk

- Elicited preferences: what people say they like.
  - Client elicited risk tolerance from questionnaire and discussion with advisor.
- Revealed preferences: what people actually like.
  - Client revealed risk tolerance from portfolio and trading behaviour.

Advisors act as the "estimator" / "black box" for risk tolerances.

Investigating suitability through behaviours

Research questions: How to...

- measure client risk?
- compare risk between clients?
- compare revealed and elicited risk?

Research outcomes:

- Measured elicited and revealed risk using Value-at-Risk.
  - Advisors suitably manage clients.
  - Advisors under-risk clients.
  - Value-at-Risk reflects cluster personas.

Financial data

Source: private financial investment dealer

- 30+ years in operation
- ~300 advisors, over $5 Billion in assets
- ~23,000 clients with ~52,000 accounts

Data: from January 1 to August 12, 2019

- Elicited risk tolerance collected via questionnaire and interviews
- Trade and transaction details

Risk tolerance data

- Five risk categories: low, low-medium, medium, medium-high, high

Elicited risk:

- Advisor allocates category weights (e.g. 50% low-medium, 50% medium).

Revealed risk:

- Advisor and client select portfolio (e.g 23.2% low-medium, 76.8% medium-high).

Value-at-Risk (VaR) as a measure of client risk

VaR is a quantile of the profit-and-loss distribution.

- A 99% quantile VaR is the minimum loss on worst day of one hundred

$$\mathrm{VaR}_\alpha(x) = x^T\mu + \sqrt{x^T\Sigma x} \cdot z_\alpha$$

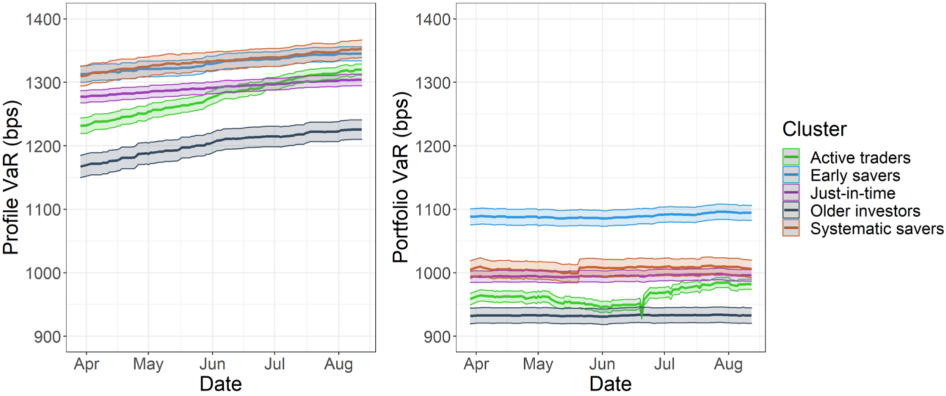
For some representative ETFs:

- μ – mean return vector
- Σ – covariance matrix

Risk represented by market ETFs

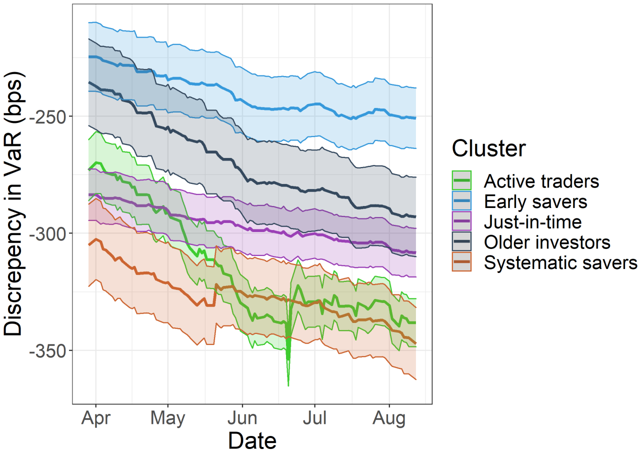
- VaR is calculated using representative iShare ETFs:
  - Low risk - Money Market
  - Low-medium risk - Monthly Income
  - Medium risk - TSX 60 Index
  - Medium-high risk - US Small cap index
  - High risk - Gold index
- Higher risk category $\Leftrightarrow$ higher return and volatility
- VaR incorporates correlations between ETFs.

VaR across clusters



Left panel is elicited VaR, and right panel is revealed VaR.

VaR discrepancy across clusters



Summary

VaR: informative measure of individual risk

- Advisors manage portfolios consistent with suitability expectations.
- Advisors generally under-risked clients.
- Evidence demonstrating robustness of clusters.

Thank you!

More information and references:

- Thompson, J.R.J., Feng, L., Reesor, R.M. and Grace, C. "Know Your Clients' behaviours: a cluster analysis of financial transactions", *Journal of Risk and Financial Management*, Volume 14, Issue 2, (2021), Article No. 50
- Thompson, J.R.J., Feng, L., Reesor, R.M., Grace, C., and Metzler, A. "Measuring financial advice: aligning client elicited and revealed risk", *Financial Analysts Journal*, (submitted May 2021)

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