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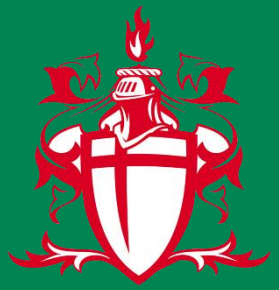
Biases in Trustee Decision Making

Insights from Behavioural Finance



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27 June 2018

Agenda: research on the decisions of pension fund trustees

- Introduce our project
- Present the findings from extant behavioural finance research relevant to the same settings in which trustees operate
- Discuss our new empirical findings

Background of our current project

- Most of research in behavioural finance focused on individuals: limited research on institutional investors
  - Reviews: Barberis & Thaler (2003) *Handbook of the Economics of Finance*; Shefrin (2009) *Foundation and Trends in Finance*
- We have been employed by the IFoA to investigate decision-making biases in pension fund trustees
- This is joint academic research by City, Leeds, and UEL, together with support by Aon and Invesco

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Behavioural finance biases

- Many behavioural finance biases have been identified so far
- Some examples:
  - Naïve diversification effect: 1/N heuristic (Benartzi & Thaler, 2001, AER)
  - Disposition effect: investors reluctant to sell large losses, eager to realize small gains (Shefrin & Statman, 1985, JoF; Weber & Camerer, 1998, JEB&O)
  - Overconfidence: leads to excessive trading, excessive market volatility, excessive market entry, excessive risk taking (Barber & Odean, 2000, JoF; Camerer & Lovallo, 1999, AER; Daniel et al., 1998, JoF)
  - Loss aversion: losses loom larger than gains (Benartzi & Thaler, 1995, QJE)

Sophisticated institutional investors

- The majority of the research on behavioural finance has investigated small retail individual investors
  - They tend to be lay people and less sophisticated
- Larger institutional investors are rarely investigated directly
  - Some field studies using large data sets
  - They are more sophisticated with more experience
- The limited research shows that more sophisticated investors also display behavioural biases, but not as strong
  - (e.g., Feng & Seasholes, 2005, RoF)

Project aim

- Our aim: To investigate sophisticated pension fund trustees
  - How do their decisions differ from previous behavioural finance findings

- First, we need to identify the environment in which they make decisions
  - In partnership with Aon and Invesco

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Researching decisions of pension fund trustees

Three main areas have been identified

- Group decision-making
  - Trustees make decisions in groups
- Judge-Advisor Systems (JAS)
  - Trustees employ expert advice
- Surrogate decision-making
  - Trustees make decisions on behalf of others

Extant research

- We will present a review of the extant research on the 3 areas identified
- And how they apply to trustee decision-making
- More detailed materials and references can be found here:
  - Weiss-Cohen, L., Ayton, P., Clacher, I., Thoma, V. (2018). Behavioral biases in pension fund trustees' decision-making. *Review of Behavioral Finance*. doi: 10.1108/RBF-05-2018-0049
- This review is being used to guide our current new empirical research in the field

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Group decision making

How group decisions are reached

- Two main systems of decision rules:
  - Voting
  - Consensus (majority of trustee board decisions)
- Two main sequential processes:
  - Revision: voluntary, private, independent revision of one's judgement using information shared during group discussions
  - Weighting: mutually coercive process to reach a final consensus, which sometimes can be out of bounds of original individual ranges

Group decision biases: Group performance vs. Individual performance

- Despite common beliefs and a corporate appetite for brainstorming sessions, groups are usually not very efficient
- Lower productivity per person than separate individuals (Paulus et al., 1993, PSPB)
- Groups typically perform below their pooled potential
- Groups perform worse than the best individual in the group
  - However how to find the best individual *ex-ante*?
- (NB: in some specific cases groups perform better, such as “eureka” questions with demonstrably correct solutions – not applicable to trustee decisions, see Kerr & Tindale, 2004, ARP)

Group decision biases: Process losses and illusion of efficiency

- Group inefficiencies stem from process losses (Diehl & Stroebe, 1987, JPSP)
  - Reduce motivation and coordination
  - Social loafing
  - Free riding
  - Self-censorship and inhibition
- Illusion of efficiency persists for those working on groups (Stroebe, Diehl, & Abakoumkin, 1992, PSPB)
  - They believe they are more productive
  - They claim each others' ideas as their own

Group decision biases: Common knowledge bias – Hidden profiles

- Groups do not share information (Stasser & Titus, 1985, JPSP; Lu, Yuan, & McLeod, 2012, PSPR)
- Decisions are based on information that was previously shared; unshared information is not discussed
  - Unshared information cannot be validated or positively evaluated
- Hidden profiles that would lead to better decisions are not uncovered – Common knowledge solution
- Trustee boards bring together individuals from different backgrounds – but information is not being shared

Group decision biases: Group polarization

- Polarization occurs when individuals' views become more extreme after group interactions (Isenberg, 1986, JPSP; Moscovici & Zavalloni, 1969, JPSP; Myers & Lamm, 1976, PB)
- Individuals do not want to be average: They want to take more extreme positions than the rest of the group
- Confirmation bias also plays a role
- Interaction enhances and reinforces the original ideas, making them more salient

Group decision biases: Choice shifts

- When the group pooled consensus is more extreme than the average of the individuals', then choice-shift occurs (Hinsz & Davis, 1984, PSPB; Schroeder, 1974, JPSP)
  - This can be either a "risky-shift", or a "cautious-shift"
  - Depending on the direction initially favoured by the individuals (Stoner, 1968, JESP)
- Diffusing of responsibility allows for more extreme views (Pruitt, 1971, JPSP)
- Choice-shift can be so extreme to lay outside the range of original independent decisions (Sniezek & Henry, 1989, OBHDP)

Group decision biases: Summary

- Group decisions are not as efficient as commonly thought
- Information is not shared
- Process losses
  - Loafing
  - Free-riding
  - Self-censorship
- Choices become more extreme: shifted and polarized

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Judge Adviser Systems (JAS)

How Judge Adviser Systems (JAS) work

- Applies to settings in which there is one judge making the decision, supported by one or many advisers
  - Judges make the decisions
  - Advisers provide advice to judges
- Trustees are under the influence of external advice
  - Investment, legal, actuarial, accountancy advice
- Excessive influence of advice is detrimental; but dismissing good advice is also not ideal: balancing is crucial

JAS: Cued vs. independent advice

- Decisions can be "*cued*" – no prior decision before advice; or "*independent*" – prior decision before advice, then reviewed
- Cued decisions are more susceptible to adviser influence than independent advice
  - Cued judges are under the influence of "mental contamination" (Wilson & Brekke, 1994, PB)
  - Trustees are mostly cued judges
- Judges prefer to be independent and make an initial decision before getting advice (Scrah et al., 2006, JBDM)

JAS: Why is advice taken?

- Diffuse responsibility (legal liability of trustees)
- Facilitate *ex-post* justification
- Improve the quality of their decision
- Minimize decision-making efforts
- Increase confidence
- Not to offend advisor, also ensuring more advice might be available in the future
- (Bonnacio & Dalal, 2006, OBHDP; Harvey & Fischer, 1997, OBHDP; Scrah, Dalal, & Sniezek, 2006, JBDM; Sniezek & Buckley, 1995, OBHDP)

JAS: Advice is discounted

- Judges discount the advice, give more weight to their own opinions: ego-centrical discounting (Yaniv & Kleinberger, 2000, OBHDP)
  - Weight can change, but one's own opinions rarely totally ignored
  - Even when advice is reliable, and the judge knows little
- Judge has access to own reasoning to support their judgments. Adviser's reasoning is not as well supported
  - Providing support to advice increases its weight (Soll & Mannes, 2011, IJF)
- Preservation of self-esteem also important: Judges put more weight on their own judgements (Soll & Larrick, 2009, JEP:LMC)

JAS: Several factors increase the weight of advice

- Well supported, well argued, advice
- Experts who display confidence, knowledge and experience
- Task is difficult (or important decision)
  - Conflicting advice can be surprisingly effective
- Smaller distances between advice and own views
  - Space for advisor manipulation
- Paid-for advice (sunken cost): Crucial for trustees
- Good reliable advisors, with good reputation

Judge Adviser Systems: Summary

- Judges egocentrically discount advice received
- However advice can receive higher weights in certain situations – <u>all below apply to trustees</u>
  - When the decision is cued, and not independent
  - To diffuse responsibility (legal liability of trustees)
  - When the task is complex/important
  - When the adviser is confident and articulated
  - When advice is paid-for

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Surrogate decision-making

Surrogate decisions

- Decisions made on behalf of others
- Differentiates between “self” and “other” decisions
- The ultimate beneficiary of the decision is someone else
- Typically studied in medical research on intensive care / end-of-life / incapacitation scenarios
- Gold standard: substituted judgement, or making the same decision the other *would* make if they could
  - Different than the decision they *should* make

Surrogate decisions: Poor performance

- Surrogates usually perform very poorly (Sulmasy et al., 1998, AIM)
- Surrogates tend to incorrectly predict the wishes of others
- Often they do not perform better than chance
- When they do, it's because they are similar, or related
  - Even family members are wrong 30% of the time (Seckler et al., 1991, AIM)
- Even when patients disclose their preferences to the surrogates, the surrogates perform poorly (Ditto et al., 2001, AIM)

Surrogate decisions: Preference projection

- Surrogates project their own preferences (Fagerlin et al., 2001, HP)
- The decisions are closer to the surrogate's preferences than to the other's
  - Similar surrogates make better decisions (Hoch, 1987, JPSP)
- False-consensus effect: we believe others think like us (Marks & Miller, 1987, PB)
- Egocentric anchoring and adjustment (Epley et al., 2004, JPSP)
- Even when holding discussions about one's preferences, surrogates project

Surrogate decisions:
More regressive choices towards social norm

- Surrogates tend to decide based on what the other *should* do: more acceptable social behaviour / social desirability
- This leads to more conservative behaviour, less risk-taking
- Fear of ex-post guilt also drives more conservative choices
- Surrogates also want to be socially seen as making the *right* public decisions on behalf of others: self-image preservation
- Therefore even similar surrogates will choose differently

Surrogate decisions: Empathy gap / Emotional detachment

- Empathy gap: surrogates believe that others have more muted responses (Loewenstein, 1996, OBHDP)
  - It's easier to understand one's feelings, than someone else's
  - Surrogates make emotionally detached decisions
- Reduces the valence of the thrill of a good outcome, or the distress at a bad outcome
  - More regressive behaviour towards the mean

Surrogate decisions: Risk as feelings

- Risk-taking is driven by feelings (Loewenstein et al., 2001, PB)
- Empathy gap and emotional detachment reduces the salience of feelings felt by surrogates on behalf of others
- This leads to more subdued risk-taking behaviour
  - Surrogates are more risk-averse in domains in which safety is desirable (e.g., investing)
  - And more risk-seeking in domains in which more risk is desirable (e.g., dating)
- All deviations from true risk preferences are inefficient

Surrogate decisions: Summary

- Surrogates are really poor at making decisions for others
- Surrogates project their own preferences
- Choose what other *should* not, instead of what they *would* do
- Choices are more regressive towards social norm / less extreme
  - Can lead to wrong levels of risk taking

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Our empirical research

Our experiments

- We are currently running a set of empirical work on-line capturing data from trustees in association with Aon and Invesco
- We are aiming to capture data from ~300 trustees over a set of ~10 experiments in behavioural finance
- And how they apply to the financial decisions made by trustees
- Our preliminary results are shown here for 3 experiments with 115 trustees

Experiment 1: Naïve Diversification Setup

- Trustees were given the choice between (Benartzi & Thaler, 2001, AER)

2 Funds - Balanced

Fund
FTSE All-Share companies
FTSE UK Conventional Gilts All

4 Funds - Balanced

Fund
FTSE All-Share companies
FTSE 100 companies
FTSE UK Conventional Gilts All
FTSE UK Conventional Gilts over 15 years

2 Funds - Unbalanced

Fund
FTSE All-Share companies
Balanced Fund (50% FTSE All-Share, 50% FTSE All Gilts)

4 Funds - Unbalanced

Fund
FTSE All-Share companies
FTSE 350 companies
FTSE 100 companies
FTSE UK Conventional Gilts over 15 years

Experiment 1: Naïve Diversification Results

Condition	Bond % (95% CI)
Balanced	59%(53%~65%)
Bond-Heavy	71% (65%~76%)
Equity-Heavy	43% (37%~49%)

Condition	Concentration (95% CI)	Funds Chosen
2 Funds	0.65 (0.61~0.69)	1.8 (1.7~2)
4 Funds	0.43 (0.38~0.47)	3.0 (2.8~3.2)

- Trustees allocated more funds to Bonds when there were more Bond funds to choose from and vice versa (p<.001)
- Bond/Equity split was influenced by the menu of funds available

- Trustees diversified more towards 1/N and chose more funds when there were more funds available (p<.001)
  - Concentration metric is the sum of the squares (range is 1/N ~ 1)

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Experiment 2: Framing / Context effects Setup

LOW Label	Bonds	Stocks	Worst Case	Average Case	Best Case
	100%	0%	£11,000	£11,000	£11,000
	90%	10%	£10,750	£11,500	£12,250
	80%	20%	£10,500	£12,500	£14,500
	70%	30%	£10,000	£13,500	£17,000
	60%	40%	£9,500	£15,000	£20,500
Conservative	50%	50%	£9,000	£16,500	£24,000
	40%	60%	£8,900	£18,000	£28,000
Moderate	30%	70%	£7,000	£20,000	£33,000
	20%	80%	£6,000	£22,000	£35,000
Aggressive	10%	90%	£5,000	£24,000	£43,000
	0%	100%	£2,500	£26,000	£49,500

HIGH Label	Bonds	Stocks	Worst Case	Average Case	Best Case
	100%	0%	£11,000	£11,000	£11,000
Conservative	90%	10%	£10,750	£11,500	£12,250
	80%	20%	£10,500	£12,500	£14,500
Moderate	70%	30%	£10,000	£13,500	£17,000
	60%	40%	£9,500	£15,000	£20,500
Aggressive	50%	50%	£9,000	£16,500	£24,000
	40%	60%	£8,900	£18,000	£28,000
	30%	70%	£7,000	£20,000	£33,000
	20%	80%	£6,000	£22,000	£35,000
	10%	90%	£5,000	£24,000	£43,000
	0%	100%	£2,500	£26,000	£49,500

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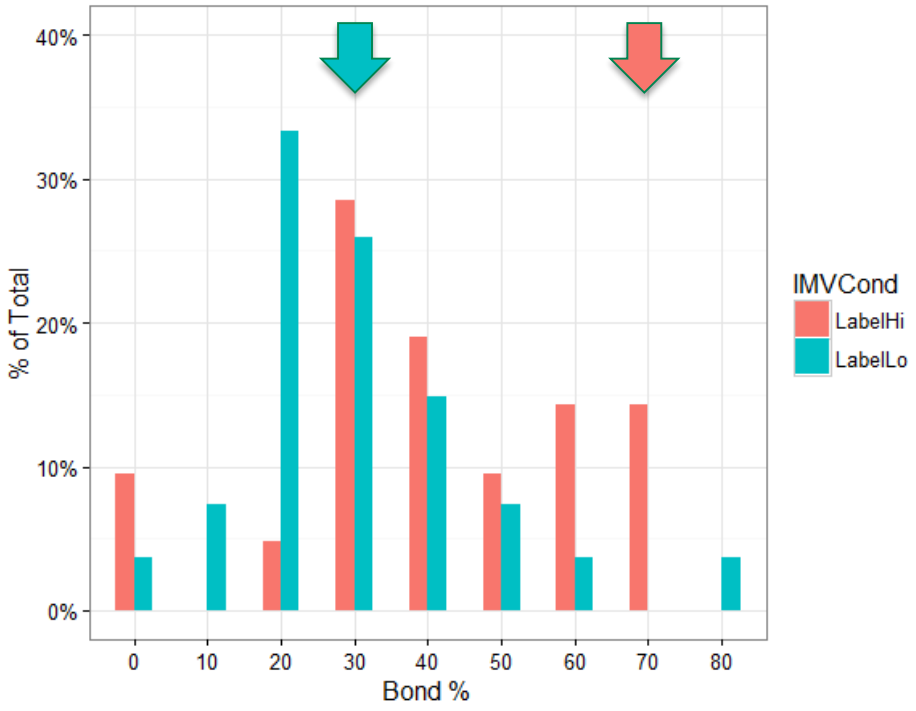
Experiment 2: Framing / Context effects Results

Condition	Bond %
Label High	40% (32%~48%)
Label Low	30% (23%~37%)

- Trustees were influenced by the labels (*p*=.05)
- Labels placed High led to higher bond selections than labels placed Low in the table



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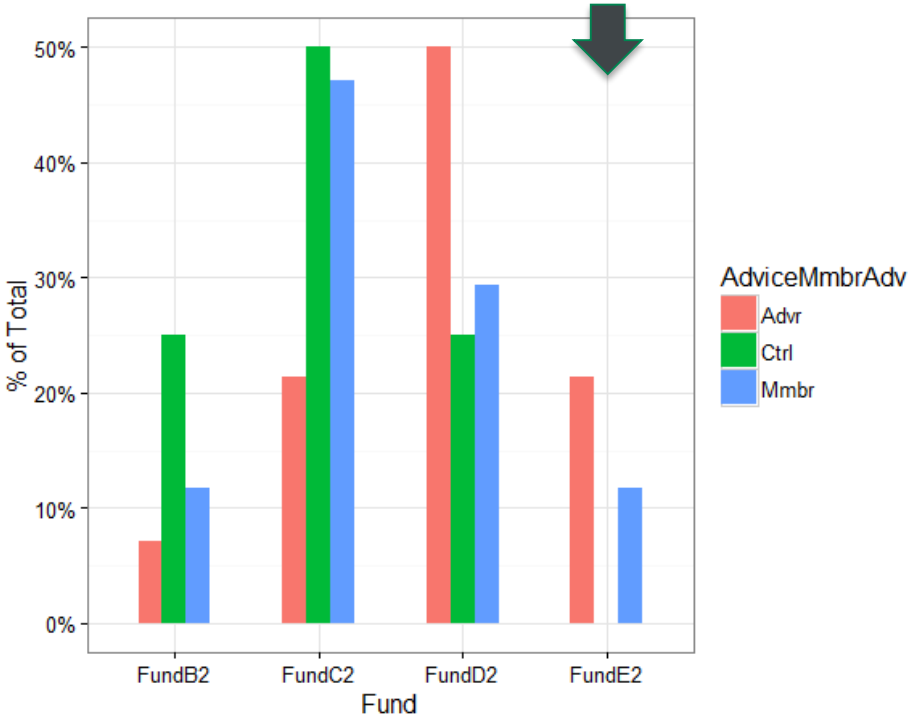
Experiment 3: Advice taking Setup

- Trustees were asked to choose from the fund to the right
  - Fund A: short-term choice
  - Fund B: medium-term choice
  - Fund C: lowest volatility choice
  - Fund D: long-term choice
  - Fund E: worst choice, dominated by D
- Advice given:
  - High Advice – Fund E
  - Low Advice – Fund B
  - Member Choice or Investment Advisor

Fund	1-year return	3-year return p.a.	5-year return p.a.
A	7.2%	5.8%	0.7%
B	1.0%	8.5%	6.7%
C	6.6%	6.2%	5.8%
D	-1.3%	7.8%	9.2%
E	-1.8%	7.0%	8.0%

Experiment 3: Advice taking Results – High Advice

- Advice to choose option E
- In control conditions prefer C
- Investment Advisor influenced the decisions against the control *(p*=.05)
  - Shift towards D and E
- Member Choice did not influence the decisions against the control
  - No shift – exact same pattern (*p*=.43)
  - Gold standard of surrogate decisions: do what the member would do, not what they should do?



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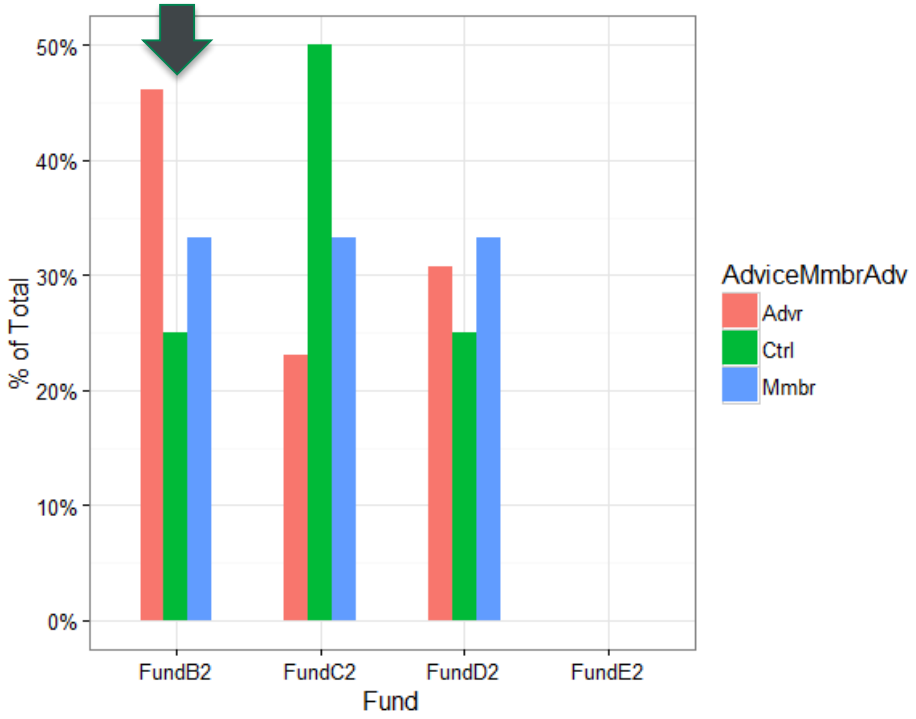
Experiment 3: Advice taking Results – Low Advice

- Advice to choose option B
- No influence of advice
  - Very similar patterns (*p*=.30)



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Conclusions

Conclusion 1/3

- Trustee decisions are set in environments that differ from the majority of extant behavioural finance research:
  - Sophisticated investors making decisions in group, with advice, on behalf of others
- Trustees unlikely to be immune from decision-making biases
- Further investigation of these biases crucial for sustainability of future pensions and influencing policy

Conclusion 2/3

- Group decisions are not efficient due to process losses; information is not shared; choice-shift and polarization leading to extreme decisions
- Advice influences decisions; many factors increase the weight of advice (payment, task difficulty, responsibility) putting unwanted importance in the adviser's hands
- Surrogates project their own choices; what should be done instead of what would be done; more muted behaviour converging towards more socially accepted choices

Conclusion 3/3

- Trustees displayed behavioural finance biases, but to a lesser extent than unsophisticated investors
- Naïve diversification (1/N): Influenced by menu of choices
- Labelling of fund options: Towards “moderate” funds
- Professional advice
  - Choosing a fund slightly worse than the dominant option
  - However, they did not shift behaviour when the advice was towards a much worse alternative
  - They did not honour the members’ choice (what they *would* do)

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Thank you.
Questions?

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