Biases in Trustee Decision Making
Insights from Behavioural Finance

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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

• Present our new empirical findings
Background of our current project

- Most of research in behavioural finance focused on individuals: limited research on institutional investors

- Project aim: 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

Behavioural finance biases

- Many behavioural finance biases have been identified so far
  - But never before with pension fund trustees

- 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)
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:
- This review is being used to guide our current new empirical research in the field

Group decision making
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 \textit{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
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: egocentric 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 – all below apply to trustees
  – 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

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

Our new empirical research
Demographics: Total 147 trustees

- Three types of trustees:
  - Member-nominated
  - Employer-nominated
  - Professional

- Significant difference in all the expertise measurements
  - Professionals have worked longer than others, are more likely to have a finance related job role, and more likely to have personal investments – more experience with financial markets
  - Member-nominated have worked fewer years as trustees, have fewer financial qualifications, roles, or personal investments
  - Employer-nominated are in between the other two groups

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Member</th>
<th>Employer</th>
<th>Professional</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>59</td>
<td>55</td>
<td>61</td>
<td>p=.06</td>
</tr>
<tr>
<td>Female</td>
<td>11 (26%)</td>
<td>9 (14%)</td>
<td>7 (19%)</td>
<td>p=.53</td>
</tr>
<tr>
<td>Trustee (yrs)</td>
<td>8.3</td>
<td>8.3</td>
<td>12.6</td>
<td>p=.01</td>
</tr>
<tr>
<td>Qualification</td>
<td>23 (30%)</td>
<td>21 (62%)</td>
<td>21 (58%)</td>
<td>p=.001</td>
</tr>
<tr>
<td>Finance job</td>
<td>20 (26%)</td>
<td>17 (50%)</td>
<td>24 (67%)</td>
<td>p=.0001</td>
</tr>
<tr>
<td>Investments</td>
<td>51 (66%)</td>
<td>26 (76%)</td>
<td>32 (89%)</td>
<td>p=.04</td>
</tr>
<tr>
<td>Total YES</td>
<td>1.22</td>
<td>1.88</td>
<td>2.14</td>
<td>p=.001</td>
</tr>
<tr>
<td>Weighted</td>
<td>10.91</td>
<td>14.35</td>
<td>24.38</td>
<td>p&lt;.001</td>
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<tr>
<td>Total Count</td>
<td>77</td>
<td>34</td>
<td>36</td>
<td></td>
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</table>

Experiment 1: Naïve Diversification

Setup

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

2 Funds - Balanced
- FTSE All-Share companies
- FTSE UK Conventional Gilts All

4 Funds - Balanced
- FTSE All-Share companies
- FTSE 100 companies
- FTSE UK Conventional Gilts All
- FTSE UK Conventional Gilts over 15 years

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

4 Funds - Unbalanced
- FTSE All-Share companies
- FTSE 350 companies
- FTSE 100 companies
- FTSE UK Conventional Gilts over 15 years
**Experiment 1: Naïve Diversification**

**N=119**

<table>
<thead>
<tr>
<th>Mix of Funds</th>
<th>Bond % (95% CI)</th>
</tr>
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<tbody>
<tr>
<td>Balanced</td>
<td>63% (56%~69%)</td>
</tr>
<tr>
<td>Bond-Heavy</td>
<td>70% (63%~76%)</td>
</tr>
<tr>
<td>Equity-Heavy</td>
<td>44% (37%~51%)</td>
</tr>
</tbody>
</table>

- The Mix of Funds influenced the proportion allocated to bonds ($F(2,101)=23.77$, $p<.001$)
- No effect for Number of Funds or Trustee Type, no effect of interactions

<table>
<thead>
<tr>
<th>Number of Funds</th>
<th>Concentration (95% CI)</th>
<th>Funds Chosen (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Funds</td>
<td>0.67 (0.63~0.71)</td>
<td>1.8 (1.6~2.0)</td>
</tr>
<tr>
<td>4 Funds</td>
<td>0.44 (0.39~0.49)</td>
<td>2.8 (2.6~3.0)</td>
</tr>
</tbody>
</table>

**Experiment 2: Framing / Context effects**

**Setup**

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

<table>
<thead>
<tr>
<th>HIGH Label</th>
<th>Bonds</th>
<th>Stocks</th>
<th>Worst Case</th>
<th>Average Case</th>
<th>Best Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>0%</td>
<td></td>
<td>£11,000</td>
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<td>£11,000</td>
</tr>
<tr>
<td>Conservative</td>
<td>90%</td>
<td>10%</td>
<td>£10,750</td>
<td>£11,500</td>
<td>£12,250</td>
</tr>
<tr>
<td>80%</td>
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<td></td>
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<td>£12,500</td>
<td>£14,500</td>
</tr>
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<td>£7,000</td>
<td>£20,000</td>
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<td>100%</td>
<td></td>
<td>£2,500</td>
<td>£26,000</td>
<td>£49,500</td>
</tr>
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</table>
Experiment 2: Labelling effects
N=80

<table>
<thead>
<tr>
<th>Trustee Type</th>
<th>Bonds %</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Label Low</td>
<td>Label High</td>
</tr>
<tr>
<td>Member</td>
<td>34%</td>
<td>48%</td>
</tr>
<tr>
<td>Employer</td>
<td>25%</td>
<td>27%</td>
</tr>
<tr>
<td>Professional</td>
<td>27%</td>
<td>26%</td>
</tr>
</tbody>
</table>

- Member-nominated trustees were influenced by labels (p=.01), no influence to other two groups
  - When the label pointed to High, there was a higher proportion of Bonds than when the labels pointed to Low

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

- Advice framed as:
  - Investment Consultant
  - Member preferences
Experiment 3: Advice taking  
N=83

- Significant effect when recommendation was framed as provided by professional advisor (p=.009)
  - Effect driven by shift towards D option in the Hi condition (p=.03), no effect in the other condition (p=.28)

- No effect when it was shown as member’s preference (p=.28)

Experiment 4: Fees
Setup

- “Past performance does not guarantee future results”

- Participants were asked to choose in which fund to invest. They were all UK Investment Grade Corporate Bond funds with similar characteristics

- If the funds are similar and invest in the same options, the rational choice is to choose the one with the lowest fees
Experiment 4: Fees

N=28

- There was a significant effect of trustee type (F(2,25)=4.02, p=.03)
- Professional trustees were the best at minimizing fees
- Research with naïve investors show that 43% choose Fund A*. In our sample, 75% of member-nominated chose Fund A, 42% of employer-nominated, and 25% of professional trustees

<table>
<thead>
<tr>
<th>Trustee Type</th>
<th>Average Fees (95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member</td>
<td>1.88% (1.55%~2.20%)</td>
</tr>
<tr>
<td>Employer</td>
<td>1.63% (1.36%~1.89%)</td>
</tr>
<tr>
<td>Professional</td>
<td>1.25% (0.93%~1.57%)</td>
</tr>
<tr>
<td>Naïve investors*</td>
<td>1.52% (1.46%~1.58%)</td>
</tr>
</tbody>
</table>

* From Newall & Parker, 2018, JBDM. A disclaimer was used “Past performance does not guarantee future results”

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
  – Biases linked to experience: Member-nominated showed stronger biases than employee-nominated, with the weakest biases by professional trustees
• Trustees display the naive diversification effect (allocating assets evenly across options, according to the 1/N rule)
• Trustees were influenced by extrinsic labels applied to funds (funds labelled "moderate" regardless of their risk level)
• Trustees were influenced by good advice from investment consultants (but not by bad advice or stated preferences of scheme members)
• Trustees chased past performance failing to choose the fund with the lowest management fees

Next steps

• The project is still on-going, with further experiments still to come in 2018
Thank you. Questions?

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