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 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)

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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)

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**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

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**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 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=.91</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&lt;.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>
</tr>
<tr>
<td>Total Count</td>
<td>77</td>
<td>34</td>
<td>36</td>
<td></td>
</tr>
</tbody>
</table>

Experiment 1: Naïve Diversification

Setup

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

<table>
<thead>
<tr>
<th>2 Funds - Balanced</th>
<th>4 Funds - Balanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTSE All-Share companies</td>
<td>FTSE All-Share companies</td>
</tr>
<tr>
<td>FTSE UK Conventional Gilts All</td>
<td>FTSE 100 companies</td>
</tr>
<tr>
<td>FTSE UK Conventional Gilts All</td>
<td>FTSE UK Conventional Gilts over 15 years</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2 Funds - Unbalanced</th>
<th>4 Funds - Unbalanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTSE All-Share companies</td>
<td>FTSE All-Share companies</td>
</tr>
<tr>
<td>FTSE 100 companies</td>
<td>FTSE 350 companies</td>
</tr>
<tr>
<td>FTSE UK Conventional Gilts over 15 years</td>
<td>FTSE UK Conventional Gilts over 15 years</td>
</tr>
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</table>
Experiment 1: Naïve Diversification  
N=119

<table>
<thead>
<tr>
<th>Mix of Funds</th>
<th>Bond % (95% CI)</th>
</tr>
</thead>
<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>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100%</td>
<td>0%</td>
<td>£11,000</td>
<td>£11,000</td>
<td>£11,000</td>
</tr>
<tr>
<td></td>
<td>90%</td>
<td>10%</td>
<td>£10,750</td>
<td>£11,500</td>
<td>£12,250</td>
</tr>
<tr>
<td></td>
<td>80%</td>
<td>20%</td>
<td>£10,500</td>
<td>£12,500</td>
<td>£14,500</td>
</tr>
<tr>
<td></td>
<td>70%</td>
<td>30%</td>
<td>£10,000</td>
<td>£13,500</td>
<td>£17,000</td>
</tr>
<tr>
<td></td>
<td>60%</td>
<td>40%</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></td>
<td>40%</td>
<td>60%</td>
<td>£8,900</td>
<td>£18,000</td>
<td>£28,000</td>
</tr>
<tr>
<td></td>
<td>30%</td>
<td>70%</td>
<td>£7,000</td>
<td>£20,000</td>
<td>£33,000</td>
</tr>
<tr>
<td></td>
<td>20%</td>
<td>80%</td>
<td>£6,000</td>
<td>£22,000</td>
<td>£35,000</td>
</tr>
<tr>
<td>Moderate</td>
<td>10%</td>
<td>90%</td>
<td>£5,000</td>
<td>£24,000</td>
<td>£43,000</td>
</tr>
<tr>
<td></td>
<td>0%</td>
<td>100%</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>Conservative</td>
<td>100%</td>
<td>0%</td>
<td>£11,000</td>
<td>£11,000</td>
<td>£11,000</td>
</tr>
<tr>
<td></td>
<td>90%</td>
<td>10%</td>
<td>£10,750</td>
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<td>20%</td>
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<td></td>
<td>70%</td>
<td>30%</td>
<td>£10,000</td>
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<td>40%</td>
<td>£9,500</td>
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<td>£20,500</td>
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<tr>
<td></td>
<td>50%</td>
<td>50%</td>
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<td>£20,000</td>
<td>£33,000</td>
</tr>
<tr>
<td></td>
<td>20%</td>
<td>80%</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></td>
<td>0%</td>
<td>100%</td>
<td>£2,500</td>
<td>£26,000</td>
<td>£49,500</td>
</tr>
</tbody>
</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

<table>
<thead>
<tr>
<th>Fund</th>
<th>Returns</th>
<th>Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>8%</td>
<td>2.0%</td>
</tr>
<tr>
<td>B</td>
<td>6%</td>
<td>1.5%</td>
</tr>
<tr>
<td>C</td>
<td>4%</td>
<td>1.0%</td>
</tr>
<tr>
<td>D</td>
<td>2%</td>
<td>0.5%</td>
</tr>
</tbody>
</table>
**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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