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Biases in Trustee Decision Making

Insights from Behavioural Finance

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11 September 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
- Present our new empirical findings



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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*
- 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)





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Researching decisions of pension fund trustees



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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



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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



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)



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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



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Group decision biases:

Common knowledge bias – Hidden profiles

- Groups do not share information (Stasser & Titus, 1985, JPSP; Lu, Yuan, & McLeod, 2012, PSPP)
- 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



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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



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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



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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)



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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)



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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



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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



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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



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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)



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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



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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



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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

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



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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



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Experiment 1: Naïve Diversification

N=119

Mix of Funds	Bond % (95% CI)	Number of Funds	Concentration (95% CI)	Funds Chosen (95% CI)
Balanced	63%(56%~69%)	2 Funds	0.67 (0.63~0.71)	1.8 (1.6~2.0)
Bond-Heavy	70% (63%~76%)	4 Funds	0.44 (0.39~0.49)	2.8 (2.6~3.0)
Equity-Heavy	44% (37%~51%)			

- 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
- The Number of Funds offered influenced the number of funds chosen and concentration between funds ($p<.001$)
- No effect of Trustee Type or interactions



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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



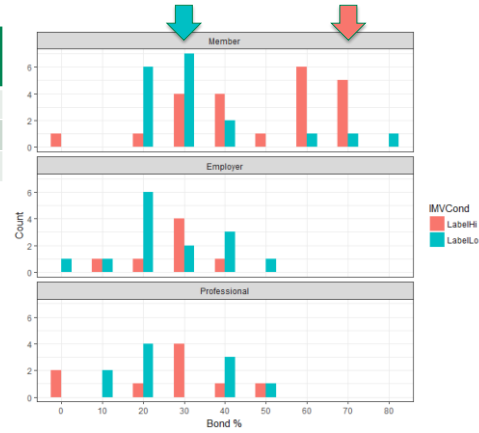
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Experiment 2: Labelling effects

N=80

Trustee Type	Bonds %		p value
	Label Low	Label High	
Member	34%	48%	.01
Employer	25%	27%	.85
Professional	27%	26%	.85

- 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



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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
- Advice framed as:
 - Investment Consultant
 - Member preferences

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%

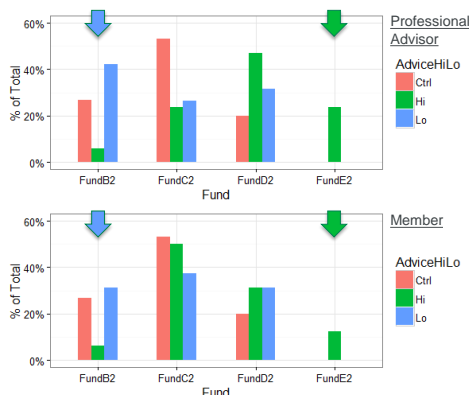


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Experiment 3: Advice taking

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 ($p=.28$)



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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

Fund	Returns	Fees
A	8%	2.0%
B	6%	1.5%
C	4%	1.0%
D	2%	0.5%



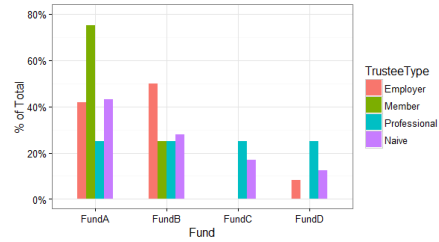
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Experiment 4: Fees

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

Trustee Type	Average Fees (95%CI)
Member	1.88% (1.55%~2.20%)
Employer	1.63% (1.36%~1.89%)
Professional	1.25% (0.93%~1.57%)
Naïve investors*	1.52% (1.46%~1.58%)



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



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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



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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



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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



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Next steps

- The project is still on-going, with further experiments still to come in 2018



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Thank you. Questions?

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