

Pension Actuaries Seminar Behavioural Finance 11 April 2008

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Behavioural Finance

“Behavioural finance...in essence simply recognises that human beings, individually and collectively, behave as humans (having psychological qualities) and not as gas molecules (having only mass and velocity).”

Frankfurter & McGoun – Ideology and the Theory of Financial Economics Journal of Economic Behaviour and Organisation 1999

Behavioural Finance

“Behavioural Finance merges psychology and economics. Some say the result is bad psychology and bad economics”

Richard Taffler, February 2007

Efficient Markets Hypothesis (EMH)

- EMH was laid out in Fama (1970) heralded a revolution in finance
- Modern finance, and indeed behavioural finance, would be impossible without EMH
- Initial Empirical tests provided strong support for the EMH
- But over the last 30 years new evidence has revealed predictability inconsistent with EMH

Anomalies

- Market capitalisation (size)
- Fundamental to price (price to book, price to earnings)
- Price and earnings momentum
- Return continuation following public events
- Accrual effect (Sloan 96)

Failings of the EMH

- Agents are not always rational
- Limits to arbitrage
 - Arbitraders may not have the correct time horizons to eradicate inefficiencies (LTCM, Amaranth)
 - Arbitrage is not risk free

The EMH backlash

- Data mining
 - But out of sample testing has proved to show the same anomalies
- Random mistakes with no consistent pattern
 - Consistency over time
- Improper risk measurement (Fama)
 - High sharpe ratios (Hansen and Jagannathan 91)

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Key behavioural errors



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Many anomalies

Adaptive Strategies	Hot Hand	Uncertainty	Gambler's Fallacy	Sunk Cost	Event Selection	Risk	Demand	Perseverance Effect	Cognitive Dissonance	Momentum
Behavioral Spiral	Jealousy Effect	Wounded Effect	Growth	Survival	Fear	Self-Deception	Distortion	Primacy/Recency Effect	Contingency	Discomfort
Carney Effect	Magic Thinking	Attention Anomalies	Rooster of Control	Underreaction	Gambler's Paradox	Stake-Over Bias	Endowment	Strategic	Responsiveness	Premium and Death
Compound Effect	Money Bias	Book-to-market	Law of Small Numbers	Window	Herding/Contagion	Technical Analysis	Framing	Sentiment	Earnings	Rational
Correlation	Connection	Chase and Sell	Best Investor	Amplitude Asymmetry	Recall of Knowledge	Clustering Effect	Gambler's Paradox	Style	Overconfidence Theory	Collective Thinking
Disposition Effect	Price Change	Confirmation Bias	Mutual Funds	Hedonic	Loss Aversion	Brown's Curse	Reaction	Traffic-light Syndrome	Frequency	Social Comparison
Endowment Effect	Regret	Culture	Over- and Underreaction	Clustering	Mental Accounting	Brain-Down Change	Bias of Stability	Value	Clamour vs. Value	Sunk Cost
Fame Contagion	Self Control	Discount Effect	Pink Revenue	Confirmation Bias	Noise	Calendar Effects	Loss Reciprocity	Other	Thought Bias	Vivid
Feasibility	Size Effect	Equity premium	Revised Paradigm	Curse of Knowledge	Procrastination	Cognitive Dissonance	Mental Comprehension	Base Rate Neglect	Influences of History	Wider
Global Domains	Super Bowl	Favourite Longshot Bias	Self-attribution Bias	Dividends	Probability and Statistics	Confirmation Bias	Optimism	Cascades	Lottery	

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Questions

1. Please write down the last four digits of your telephone number
2. Is the number of doctors in London higher or lower than this number?
3. What is your best guess of the number of doctors in London?

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More questions...

4. A health survey was conducted in a sample of adult males in New Jersey, of all ages and occupations. Please give your best estimate of the following values:
 - What percentage of the men surveyed have had one or more heart attacks?
 - What percentage of men surveyed are both over 55 and have had one of more heart attacks?

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And finally

5. Are you an above average actuary?
 - You are offered the following bet. On the toss of a fair coin you must pay £100, what is the minimum amount that you need to win in order to make this bet attractive to you?

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Heuristic simplification



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Anchoring Heuristic



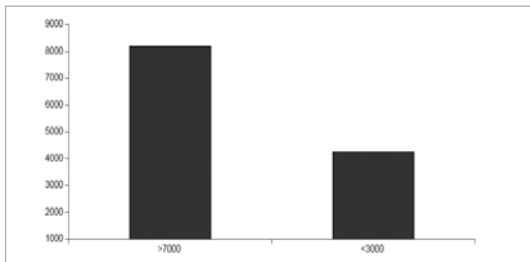
- Stage 1:**
- Person starts with initial idea of answer ("anchor")
 - Ball park estimate.
 - Anchor may be suggested by memory, or by something in environment.

- Stage 2:**
- Person adjusts away from initial anchor to arrive at final judgement.

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Anchoring

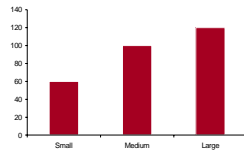
Anchoring: Telephone numbers as an input



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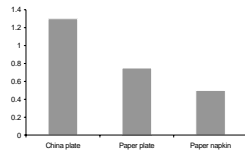
Anchoring

Numbers of M&Ms selected



Source: Wansink (1996)

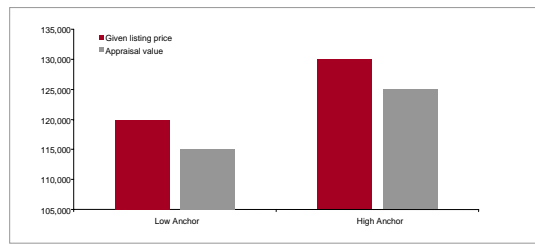
Willingness to pay for Brownie (price in \$)



Source: Wansink (2006)

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Anchoring Heuristic



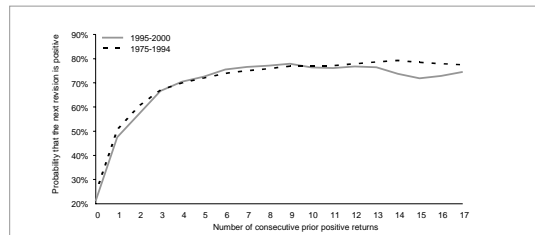
Source: Investec Asset Management, 31 December 2004

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Anchoring Heuristic



Autocorrelation of positive earnings estimate revisions 1975 - 2000



Past performance is not audited and should not be taken as a guide to the future.
Source: Sanford Bernstein

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Representativeness Heuristic – Definition



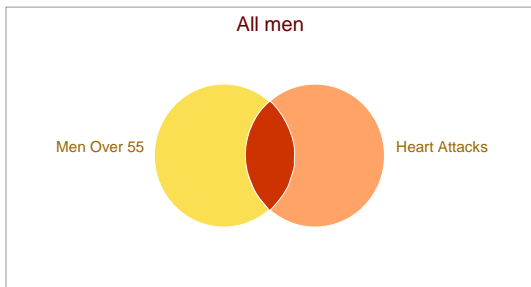
- “A person using the representativeness heuristic evaluates the probability of an uncertain event, or a sample, by the degree to which it:
- i. is similar in essential properties to its parent population
 - ii. reflects the salient features of the process by which it is generated”

Representativeness Heuristic

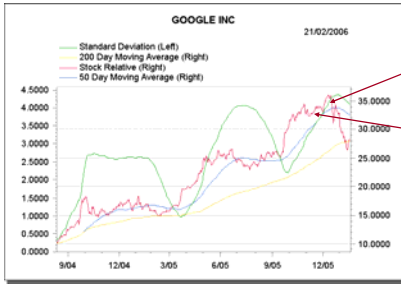


- Mary's father has five daughters
 - Na Na
 - Ne Ne
 - Ni Ni
 - No No
- What is the name of the fifth daughter?

Representativeness



Glamour Stocks



"Google is one of the largest media companies in the world – buy it!" CNBC

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Saliency Heuristic

- What is more prevalent?
 - Homicide
 - Suicide

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Saliency Heuristic

- Endowment effect
- Talking to management?

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Availability – Causes of Death

- Subjects asked to estimate frequency of various causes of death.

Cause	Estimate*	Truth
Tornado	564	90
Fireworks	160	6
Asthma	506	1,886
Drowning	1,684	7,380

* rates per 200m US resident per year
Source: Slovic, Fischhoff and Lichtenstein (76) SLOVIC, FISCHHOFF & LICHTENSTEIN (1976)

Heuristics – Conclusions

- We use heuristics because they are generally useful, but they predictably get us into trouble on certain (well-studied) tasks
- Heuristics help us avoid:
 - information processing limitations
 - time limitations
- Some errors can be avoided by education, feedback, seeking multiple perspectives. It is worth avoiding these biases when correct results are important.

Heuristics and Saving



- Heuristics also affect long term saving
 - Self control
 - 68% of people think they save too little, only 14% do anything about it and everyone only wants to spend 2 hours per year doing it
 - Hyperbolic discounting
 - Immediate gratification (chocolate and bananas 25/75)
 - Inertia
 - I will save tomorrow
 - In automatic enrolment the majority go for default savings rate and default fund (90% of participants)

Overconfidence

- People think:
 - They are more able than they actually are
 - They are more able than average
 - They are more favourably viewed by others than they are

Overconfidence

How do you consider your driving ability?

Below average	8.2%
Average	30.6%
Above average	32.7%
Well above average	28.6%

Source: Investec

True everywhere apart from Japan

Emotional Response – Loss Aversion

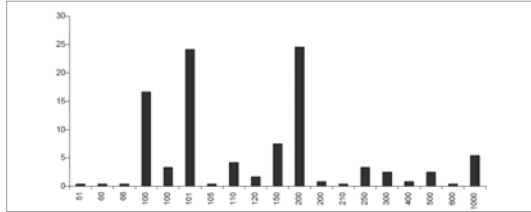


- You are offered the following bet:
 - On the toss of a fair coin you must pay £100, what is the minimum amount that you need to win in order to make this bet attractive to you?

Loss Aversion



Fund managers are just about as loss averse as everyone else (frequency %)



Source: DRKW Macro research

Loss Aversion creates panic

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Social Response – Herding



“We would rather be wrong in a crowd than right on our own!”

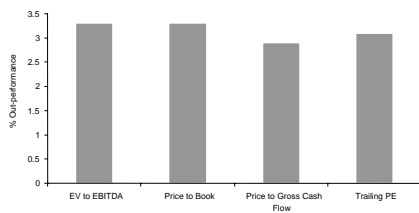


“My god! – I must have been mad thinking there was safety in numbers!”

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Behavioural errors (panic!) create value opportunities

Top Quintile Out-performance versus Large Cap Universe 1964-2004



Source: Sanford Bernstein

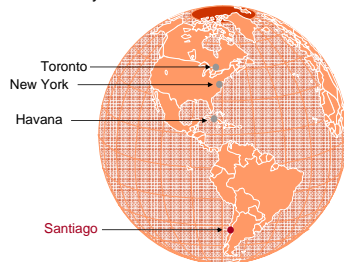
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Representativeness

- Which city is further East?
 - Toronto
 - New York
 - Havana
 - Santiago

Representativeness

- Which city is further East?



Presenter Biography

James Hand



Head of Research – 4Factor
Portfolio Manager
11 years experience

James is a portfolio manager and Head of 4Factor Research for Investec Asset Management. As Head of 4Factor Research James has responsibility for ensuring the 4Factor equity process retains its systematic, consistent structure across the UK and Global teams and develops through time.

Throughout his time at Investec Asset Management James has combined working on the UK and Global teams covering the Global Technology and Telecoms sector until March 2004 and Global Consumers to March 2007. Prior to joining Investec Asset Management, James spent three years at Schroder Investment Management, where he specialised in small cap technology stocks.

James graduated from Cambridge University with a First Class degree in Economics. He also guest lectures at Reading University's ICMA on Behavioural Finance and has written articles on the subject for national publications, including the Financial Times.

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March 2008

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