Summary. ACCY926 introduces the emerging and highly important theory of behavioural finance and makes comparisons between behavioural (descriptive) and rational (prescriptive) decision models. The course begins with some revision and overview of rational decision making as defined in economics. This includes particularly the laws of probability and the theory of maximizing expected utility [MEU]. Having established MEU as a base, the course shifts to look at the biases and other “irrationalities” of behavioural decision making and makes a comparative evaluation of the two perspectives. The philosophy of the course is that rational models remain the ideal but that people working in finance (transacting with other “real” people) need to understand both to be most effective in their jobs.

(a) Subject Description

Finance in the normative tradition of neo-classical economics is concerned almost exclusively with the theory and consequences (e.g. market efficiency) of rational financial decision making. Rational behaviour is interpreted as preference formation and decision satisfying the axioms of expected utility theory. Although the decision tools of finance rarely make use of utility theory, their underlying rationale is expected utility maximisation. For example, mean-variance portfolio theory, which identifies optimal investment portfolios with no reliance on any explicit utility function, and which did not exist within economics before modern finance, has been rationalised by Kallberg and Ziemba (1983) and Markowitz (1991) as a practical tool for approximating the maximum expected utility portfolio. Similarly, risk-neutral (e.g. Black-Scholes) options pricing reduces to expected utility maximisation, where (remarkably) the solution is the same whatever the individual’s risk aversion (utility function).

In most financial decision making contexts, the cognitive processes required to explicitly maximise expected utility (e.g. Bayesian probability revision) are onerous, and have been shown by a long tradition of experimental and field studies in psychology to be largely beyond human (actual) decision makers. Beginning notably with the work of Kahneman and Tversky (1979; 1981; 1984), psychology offers an alternative theory of individual decision making under uncertainty to the traditional normative theory assumed in most economic and financial modeling.

In recent years, economists including notably Thaler (1980; 1985; 2000), Arrow (1982) and Shiller (1981; 1990) have applied and extended the psychological theory of human (irrational) decision making, and partly in collaboration with psychologists (e.g. Kahneman et al. 1990; 1991), have proposed a theory of behavioural finance, concerning the decisions of individual investors. According to behavioural finance, decision makers are rational only within human limitations (Thaler’s “quasi-rationality”). They have bounds on how much information they can or want to assimilate, they use convenient rules of thumb (heuristics) rather than strictly logical
formal analyses, and they are affected by personal psychological biases, reference points and cognitive illusions. More appealingly from the perspective of research, individual decision makers are observed to be systematically (repeatedly) irrational, in scientifically testable ways. Like traditional positivist financial economics, behavioural finance produces empirically testable hypotheses.

Existing Research. There is now a large literature documenting known and apparent departures from rationality observed in laboratory and other studies of individual financial decision making. Summaries of this literature include DeBondt and Thaler (1985), Statman (1985; 1999), Hogarth and Reder (1987), Thaler (1991; 1992), Goldstein and Hogarth (1997), Kahneman and Riepe (1998), Tvede (1999), Shefrin (2000), Shiller (2000) and Shleifer (2000). A daunting aspect of behavioural finance is the seemingly unending diversity of patterns by which individual decision makers can be irrational. With an increasing proportion of researchers and resources in finance involved in behavioural research, this list continues to expand, and the extent and complexity of irrational human tendencies becomes more evident.

Unlike rationality, for which there is, in principle, a single coherent theory, an exhaustive understanding of individual irrationality is out of the question. However, from what is known so far, the most pervasive and empirically replicable of the biases and other “mistakes” evident in real world financial decisions can be listed relatively succinctly. These include:

1. Sunk cost effect, disposition effect or loss aversion (Arkes and Blumer, 1985; Shefrin and Statman, 1985; Odean, 1998a) The inclination to ignore and even add to previous mistakes (to “ride losses”) rather than accept them (e.g. sell a losing investment) and rationally alter direction.
2. Gambling with the house money (Battalio et al., 1990; Thaler and Johnson, 1990; Arkes et al. 1994; Keasey and Moon, 1996). Reduced risk aversion when investing previous gains from the same or related ventures.
3. Break even effect (Thaler and Johnson, 1990). The disposition to “bet on long shots” where success would mean full loss recovery and failure would cause only immaterial added loss.
4. Doubling-up (Brown and Steenbeek, 2001). The willingness to bet larger and larger sums, attempting to recover all previous losses.
5. Endowment effect (Thaler, 1980; Knetsch and Sinden, 1984; Knetsch, 1989; Kahneman, Knetsch and Thaler 1990). The unwillingness to sell something in possession at a price higher than would be offered by the same person to buy it (were it not already owned).
6. Pre-commitment to arbitrary investment limits (Thaler, 1980; 1981; Heath, 1995). To counter the sunk cost effect, commitment to a project or investment is terminated mechanically at an arbitrary pre-set limit (e.g. “sell if price drops 10%”) regardless of circumstances remaining or arising in favour of rational persistence.
7. Avoidance of regret (Bell 1981; Loomes and Sugden, 1982). Outcomes are measured not by their absolute money value but in relation to what “could have been”. A money gain comes with a sense of loss if it would have been higher under another action. Expected money value (utility) is foregone so as to avoid regret (e.g. selection of action that minimizes maximum regret rather than maximises expected utility).
8. Choosing not to choose (Thaler 1980). A fear of making things worse outweighs the attraction of possible gains, causing inertia and preventing change from the status quo. Decision outcomes are forecast not in absolute terms but relative to what would be under existing arrangements, and actions which may cause regret (when results are compared with what would occur if no action taken) are foregone regardless of their possible upside.
9. Preference reversal (Lichtenstein, S. and Slovic, P., 1971; Grether and Plott, 1979; Tversky and Thaler, 1990). Individual preferences switch depending on the manner in which they are elicited. In a choice context, the individual prefers gamble (risky asset) A rather than gamble B, whereas in a valuation context gamble B is priced more highly than A.
10. Over-confidence and over-trading (Odean 1998b; Odean 1999; Barber and Odean 1999). Over-confidence, meaning subjective probability estimates overly close to 1 or 0 (certainty) relative to the available evidence (Stael von Halstein 1972; Alpert and Raiffa, 1982), breeds
excessive optimism and induces over-trading, by indicating profit opportunities that actually don’t exist.

11. Over-reaction (DeBondt and Thaler 1985; 1987; 1990). Forecast errors are more volatile than actual changes in the forecast variable. More specifically, forecast changes are negatively correlated with forecast errors, suggesting systematic over-confidence.

12. Myopic loss aversion (Benartzi and Thaler 1985). Investors who weight losses more heavily than gains ignore good long term investments because of their frequent short term price falls (a possible explanation of the equity premium puzzle). The more frequently an investment is evaluated, the lower must be its price volatility (relative to its mean return) to appeal to the investor.

This list presents only a glimpse of the literature in behavioural finance. Behavioural finance is not merely a collection of “anomalies” contradicting notions of decision makers as rational, but a coherent body of theory, mostly originating in psychology, explaining and predicting the consistent (systematic) irrationality in observable human decision making.

(b) Prescribed Reading

Relevant articles will be prescribed and discussed in class.

(c) Subject Requirements and Assessment

For the purposes of determining final grades for ACCY 926, student performance will be evaluated on a composite mark, determined as follows:

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<th>Percentage</th>
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<tbody>
<tr>
<td>Research Paper</td>
<td>30%</td>
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<tr>
<td>Group presentation (April 11)</td>
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<tr>
<td>Midterm Exam</td>
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<tr>
<td>Final Examination</td>
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NB. Marks may be scaled.

NB. To be awarded a Pass or higher grade in this subject, students must achieve a satisfactory grade in the final exam.

LECTURE PROGRAMME

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<thead>
<tr>
<th>WEEK</th>
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<tr>
<td>1</td>
<td>7 March</td>
<td>Introduction</td>
</tr>
<tr>
<td>2</td>
<td>14 March</td>
<td>Review of probability laws</td>
</tr>
<tr>
<td>3</td>
<td>21 March</td>
<td>Value of information, utility</td>
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<td>4</td>
<td>28 March</td>
<td>Expected utility theory</td>
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<tr>
<td></td>
<td>4 April</td>
<td>Sunk cost effects, prospect theory</td>
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<td>5</td>
<td>11 April</td>
<td>Gambling with house money</td>
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<td>6</td>
<td>18 April</td>
<td>Mid-session recess</td>
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<tr>
<td>7</td>
<td>25 April</td>
<td>Mid-session recess</td>
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REFERENCES on Behavioural Finance


Savage, L.J. (1954)


