Behavioural Corporate Finance.

•**Traditional Finance** – Assumption: managers and investors are rational and self-interested ("homo economicus" view).

•**Behavioural finance/Behavioural Corporate Finance**: "Real-world" view- Managers and investors may be irrational (Psychological Biases) ("homo sapiens" view).

Behavioural Finance versus Behavioural Corporate Finance

- **Behavioural Finance**: Investors irrational/biased (managerial rationality taken as given). Focus on capital market imperfections/inefficiency.

- **Behavioural Corporate Finance**: considers managerial irrationality/biases. Focus on corporate finance decisions (investment appraisal, capital structure/dividend policy.

Development of Behavioral Finance I.

- **Traditional Research in Finance**: Assumption: Agents are rational self-interested utility maximisers (=> portfolio theory/EMH/ MM theorems/ agency models etc).
- 1955: Herbert Simon: **Bounded Rationality**: Humans are not computer-like infinite information processors. *Heuristics. (rules of thumb)*
- **Economics experiments**: Humans are not totally self-interested. *Bounded self-interest.*

Development of Behavioral Finance II.

- Anomalies: Efficient Capital Markets.
- Excessive volatility.
- Excessive trading.
- Over and under-reaction to news.
- 1980's: Werner DeBondt: coined the term Behavioral Finance.
- Prospect Theory: Kahnemann and Tversky 1980s.

Development III

- BF takes findings from psychology.
- Incorporates human biases into finance.
- Which psychological biases? Potentially infinite.
- Bounded rationality/bounded selfishness/bounded willpower.
- Bounded rationality/emotions/social factors.

Recent Development: **Behavioural Corporate Finance**

- Researchers recognise that biases that affect investors and financial markets also may affect managers and corporate decision-making.
- Investment appraisal/capital structure/dividends

BCF: 2 approaches (Baker and Ruback)

- **Irrational Managers** (taking investor rationality as given => EMH/accurate pricing in FMs): eg managerial overconfidence and corporate debt

- **Irrational Investors**: affect on rational managers' decisions (investment/financing/dividends)
- => market timing (equity issues/repurchases)/dividend catering.

Potential biases.

- Overconfidence/optimism
- Regret.
- Prospect Theory/loss aversion.
- Representativeness.
- Anchoring.
- Gambler's fallacy.
- Availability bias.
- Salience….. Etc, etc.

Focus in Literature

- Overconfidence/optimism
- Prospect Theory/loss aversion.
- Regret.

Bias 1: Managerial Overconfidence

- Effect on Investment Appraisal
- Effect on Capital Structure
- Effect on Dividend Policy.

Managerial Overconfidence

- Psychologists: Agents more likely to be Overconfident when a) Task is very risky/outcomes uncertain.
- b.) Task is complicated
- c.) Agents are committed to the task/project.
- => Managers!
- Evidence: gender effects: age/experience effects (confirmation bias).

Managerial Overconfidence

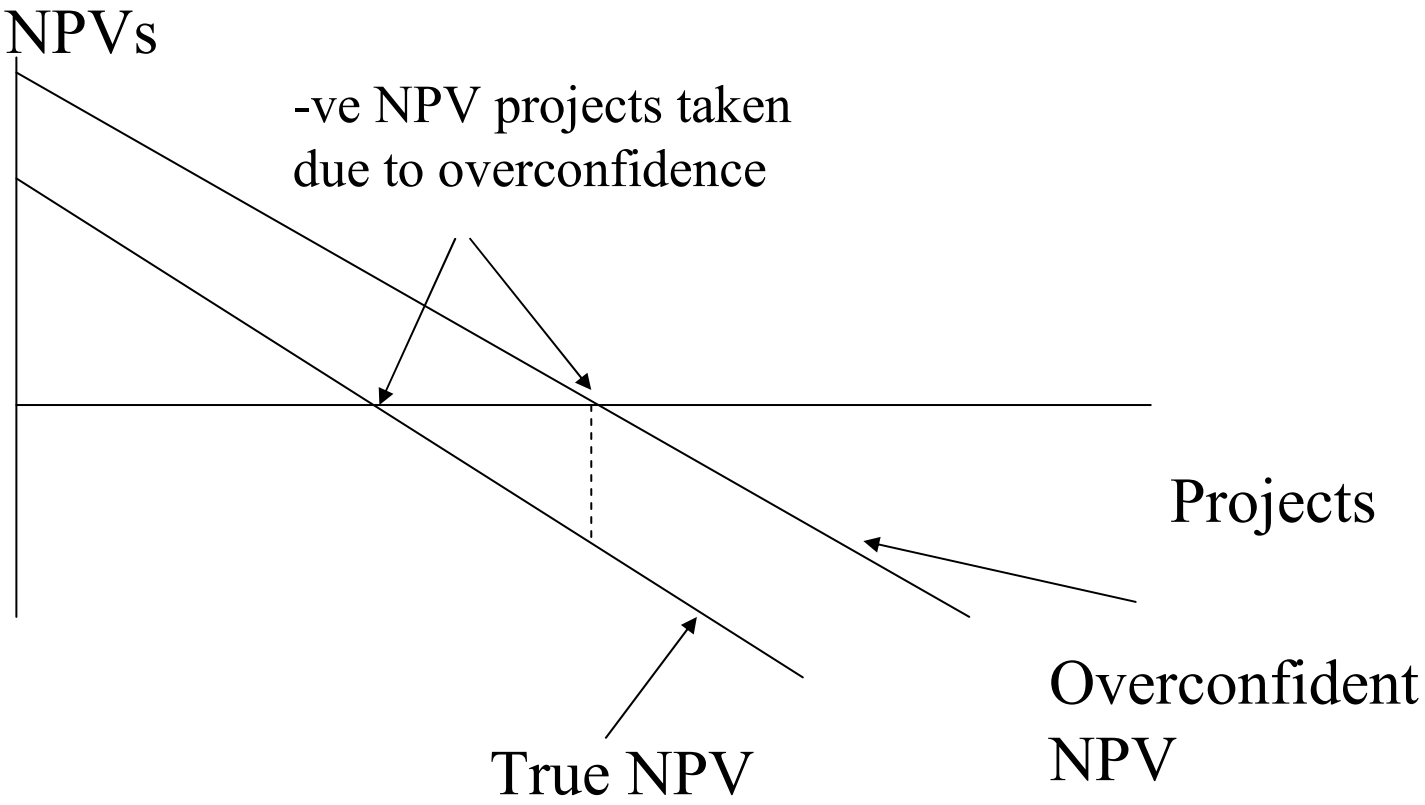
- Confirmation bias:
- Risky outcomes are a combination of skill and luck
- Confirmation bias: good outcomes are attributed to skill: bad outcomes are attributed to bad luck, and are therefore discounted
- Bayesian updating.

Overconfidence and Investment Appraisal

$$NPV = -I + \frac{E(X_1)}{1+r} + \frac{E(X_2)}{(1+r)^2} + \frac{E(X_3)}{(1+r)^3} + \ldots$$

- Take Project if NPV > 0.
- Managerial Overconfidence: Overestimate cashflow forecasts: overestimate managerial ability/underestimate risk (too low r) = > upward bias in NPV.
- Too many bad (negative NPV) projects taken.
- Traditional argument: managers take bad projects due to incentive problems.

Managerial OC and Investment Appraisal (continued)

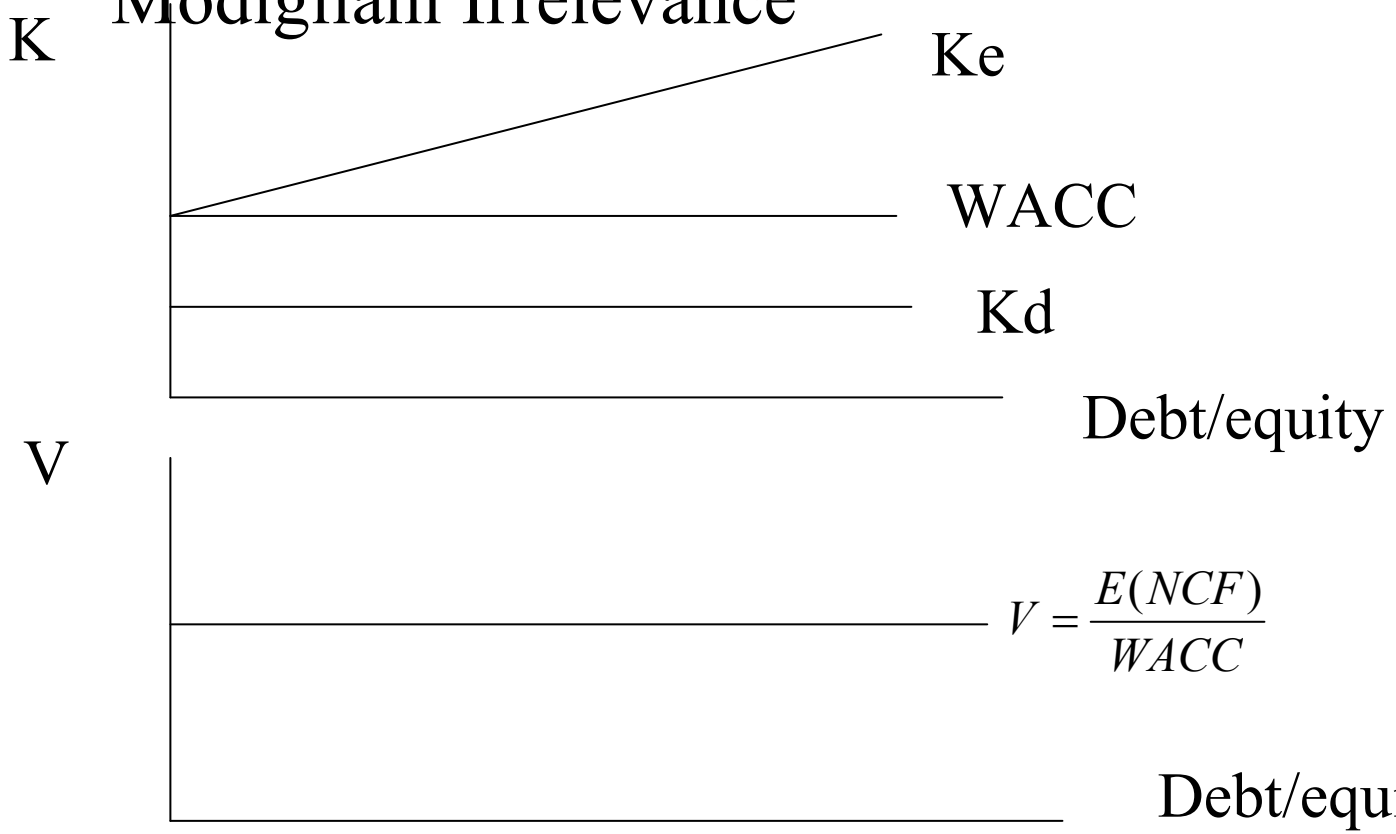
- 

Behavioural Problems versus Incentive problems

- Traditional View: managers may take bad projects due to private benefits/ empire builders. Can be corrected to an extent by incentive schemes/equity/stock options
- Behavioural View: if managers biased/ may think they are doing the right thing for shareholders: much more difficult to correct! Education?

Overconfidence and capital structure

- Recall traditional Modigliani Irrelevance



MM Irrelevance

- Perfect Market conditions
- Traditional researchers brought in imperfections like managerial agency problems/incentive problems
- Asymmetric Information
- Debt $\uparrow$ => V $\uparrow$ possibly
- Debt disciplines managers to work harder
- Debt positive signal to the market.

Overconfidence and debt

- “Overconfidence may induce firms to have an excessive level of debt in capital structure.” Shefrin 1999
- Implication: overconfidence is value-reducing

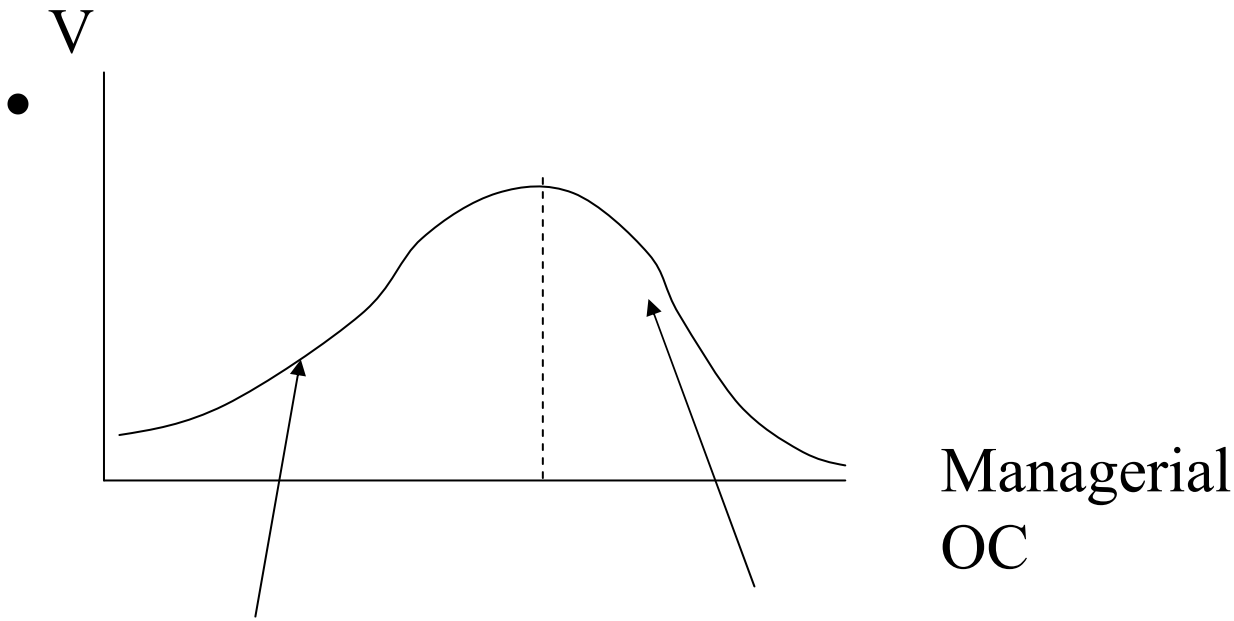
Is overconfidence bad or good: 1?

- Investment Appraisal: too many bad (-ve) NPV projects
- But: Managers may be naturally risk-averse (undiversified human capital tied up in business => may reject good (risky) projects from shareholders viewpoint)
- Therefore, managerial OC and risk-aversion may offset each other (Gervais et al)

Is Overconfidence good or bad: 2?

- Capital Structure:
- We have argued that OC => debt ↑ => V ↓ ?
- But: Fairchild's (2005) model:
- OC => D ↑ => Expected Financial Distress ↑
- But, OC => Managerial effort ↑ => increase probability of success.
- Therefore, ambiguous effect of OC on firm value.

Managerial OC and firm value



Increased OC => increased debt and higher effort: effect dominates

Financial distress effect dominated

Implications for hiring managers?

Venture capitalists and overconfidence

- Zacharakis finds that VCs are overconfident in their assessments of entrepreneurs' business plans.
- Invest in too many bad ventures.
- Suggests formal ways of eliminating VC's OC.
- But do we want to completely eliminate VCs/Es/managers' confidence/ebullience/animal spirits?

Bounded Rationality and Investment Appraisal: 1

- Many projects on the manager's desk to appraise.
- Bounded rationality/rule of thumb/heursrics => manager may only look at subset of projects?

- **Good or bad?**

- May be missing out on good projects, but economising on effort and resources (trade-off)

Bounded Rationality and Investment Appraisal 2

- Net Present Value Rule based on exponential discounting
- Real-world evidence of people's Hyperbolic Discounting!
- => Time Inconsistency
- => postpone pain/promote pleasure!

Hyperbolic discounting.

$$U_t(u_t, u_{t+1}, ..., u_T) = u_t + \beta \sum_{\tau=t+1}^{T} \delta^{\tau} u_{\tau}$$

$\beta \in (0,1]$. Provides the hyperbolic discounting: intertemporal inconsistent preferences: bringing forward pleasure, delaying pain.

$\beta = 1$ Standard NPV.

Example of hyperbolic discounting:

- “I have ten Saturdays to do my essay. Each Saturday, I must decide whether to go to the cinema or do the essay.”
- **Each** Saturday, I say “I will go to the cinema this week, and start the essay next week.”
- In the end, I leave the essay to the last week, when I must do it!
- Similar problems for managers in investment appraisal.

Game-break!

- Game 1.

Bounded Rationality and Investment Appraisal: 3

- NPV: static, ‘now-or-never’ approach
- Real Option approach.
- Option to delay, option to expand, option to abandon.
- Flexibility in managerial decision-making (particularly valuable in the face of extreme uncertainty: eg R and D
- Project’s Value-added = Static NPV + RO value

Bounded Rationality and Investment Appraisal: 2 (continued)

- In real-world, managers do not use real options much
- Behaviourally, status quo bias, cognitive dissonance, simply don't like flexibility/decision-making.
- William Joyce's "ice-cream" example!!!

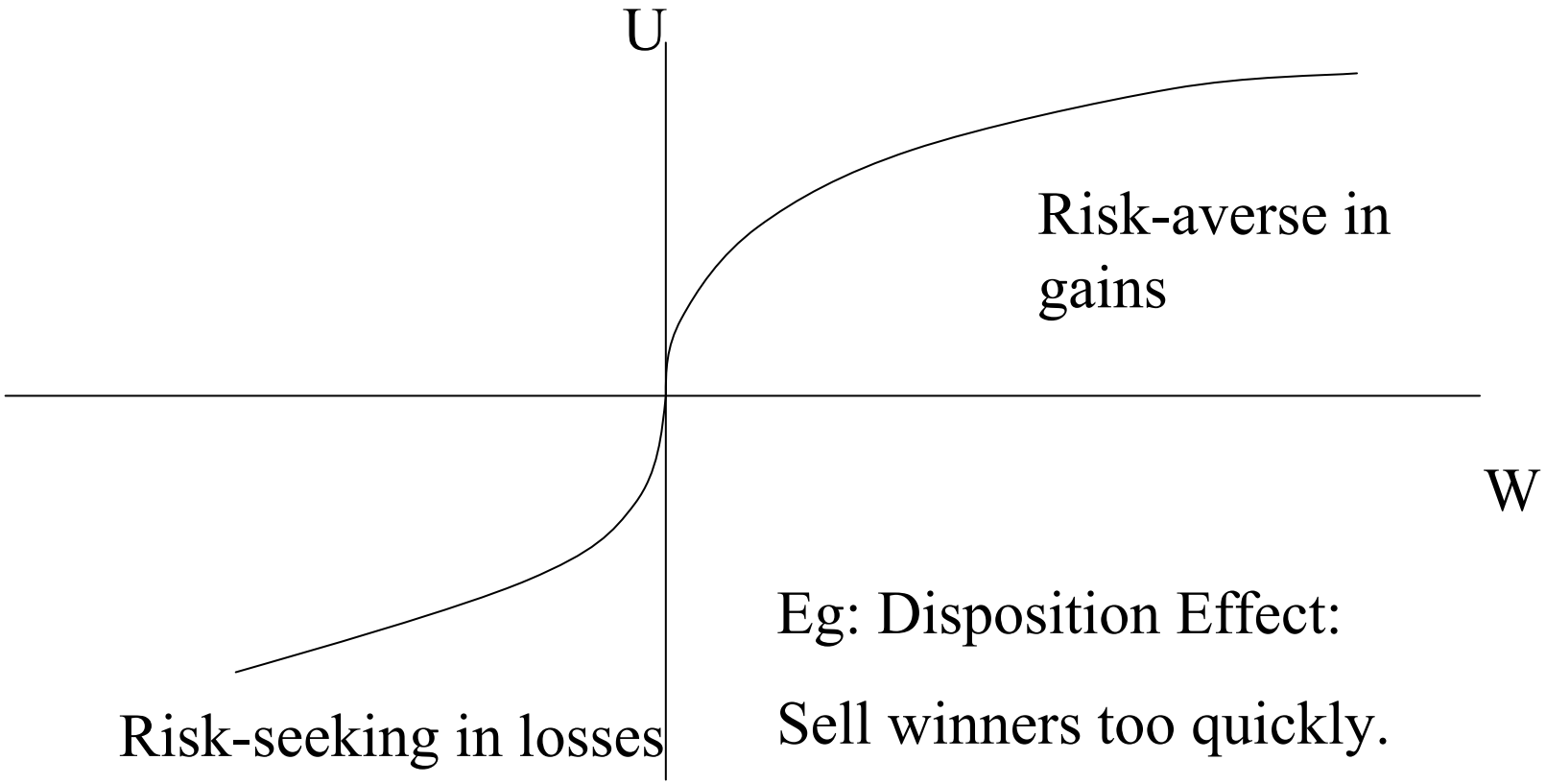
Investment Appraisal and Real Option to abandon (Statman and Caldwell)

- One of the most valuable of real options is the option to abandon.
- Initially, invest in a project if NPV > 0.
- Later (say two years later): re-appraise the project.
- Continue project if $PV_{Cont} > PV_{aband}$
- Otherwise, abandon.
- Ignore sunk costs.

Refusal to Abandon/Project entrapment/escalation of commitment (Statman and Caldwell)

- Textbook Economic accounting (comparison of PVs from abandoning and continuing, ignoring sunk cost)
- Mental Accounting/framing
- Managers include sunk loss: chase it!
- Entrapment re-inforced by regret theory/loss aversion/responsibility (see Staw).

Understanding project entrapment through Prospect Theory and mental accounting.



Eg: Disposition Effect:

Sell winners too quickly.

Hold losers too long.

Example

- Your company appraised a new project two years ago. It had a positive NPV. So, you invested in it.
- Now, you are re-appraising it.
- It is failing. In the first two years, it has destroyed value to the tune of - £2,000M.
- Your options: abandon the project for abandonment value £1,000M (eg assets sold).
- Continue the project => equal probability of future success (Present value = £2,000M) or failure (present value = 0)

Correct economic accounting approach

- Ignore sunk loss
- Abandonment => £1,000M
- Continuation => equal prob of zero or £2,000M
- Risk-aversion => abandon (market will like this!)

Mental Accounting plus Prospect theory

- Adding in the sunk loss
- Abandonment => -£1,000M
- Continuation => zero in good state, -£2,000 in bad state
- Look at prospect theory diagram => “risk-seeking in negative domain” => continue project
- Managerial chasing of loss (Las Vegas!)
- Worsened by regret theory/responsibility/corporate blame!

Mental accounting and dividends

- Miller-Modiglani dividend irrelevance
- Investors indifferent between capital gains and dividends
- Mental accounting/framing/self-control
- ATT example

BCF- Irrational Investors approach

- Dividend catering
- Repurchase timing
- Issuing overvalued equity (see Jensen's paper)
- Corporate Name changes.

- Rational Managers exploiting investor irrationality

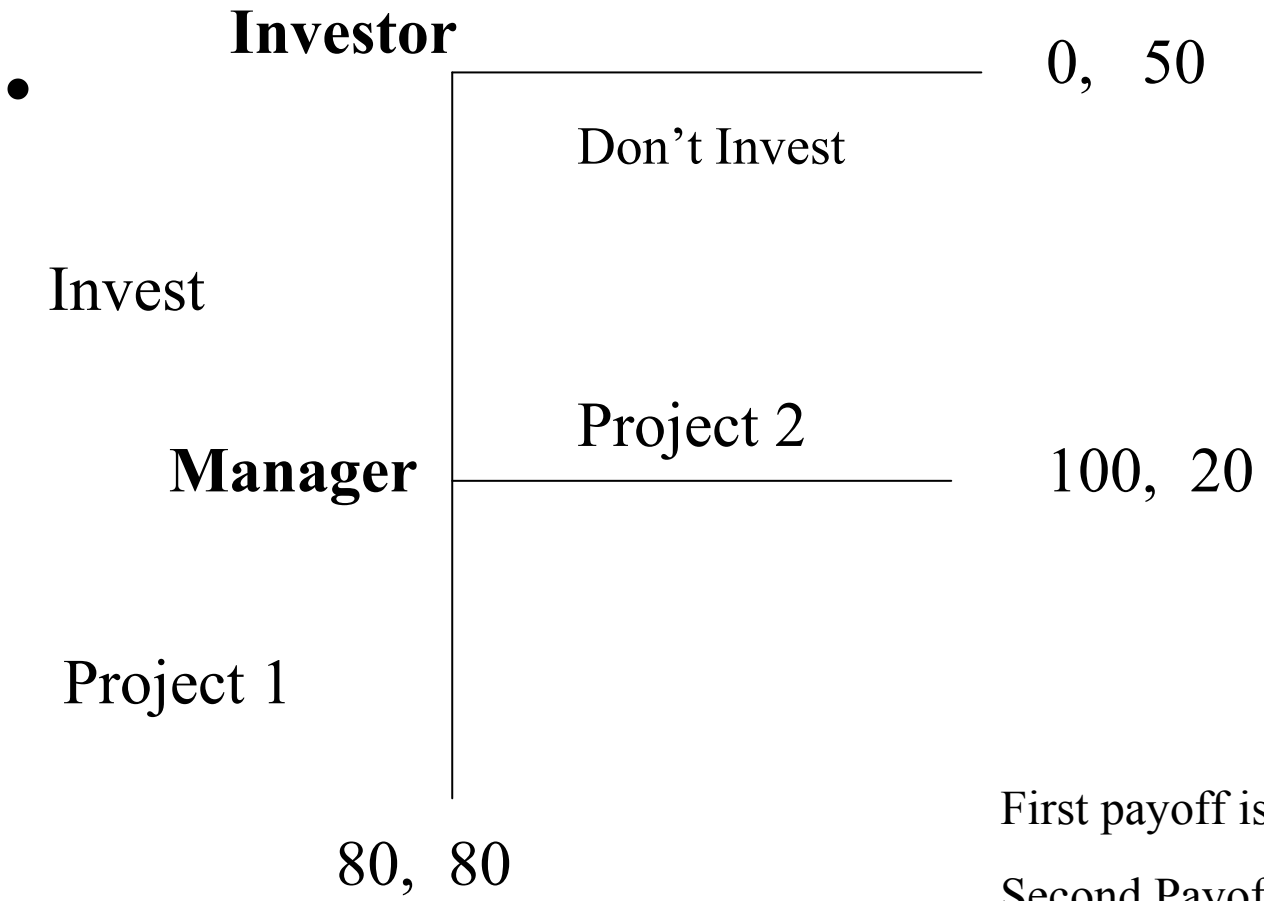
Latest research: Bounded self-interest

- Principal-agent problems in corporate finance (moral hazard)
- Eg Investor puts money into corporation
- Then manager may shirk/steal/waste money on favourite projects/private benefits
- Solution: Incentive Schemes (managerial equity/stock options), monitoring
- …..

Latest research: Bounded self-interest (continued)

- Bounded self-interest => not totally self-interested
- “Fairness”, trust, empathy.
- Guilt, shame….
- Important in investor/manager relationships? Venture capitalist/entrepreneur relationships

Investment game



First payoff is manager's.

Second Payoff is investor's.

To finish:

- Monty Hall experiment!