Why Multiple Goals in Finance

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Based on two papers by W.G. Hallerbach & J.Spronk

See www.ssrn.com

Contents

1. What is a goal?
2. What is finance?
3. Average versus Non-Average Decision Makers
4. Decision Making & Performance Evaluation
5. Why multiple goals in finance?
6. Conclusions

1.What is a goal?

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- Desired situation
- Described in terms of goal variables
- And in terms of desired goal values (max,min,target, target range,etc.)

What is a criterion?

What is an objective function?

Desirability of goal values

1.What is a goal?

- Desired situation
- Described in terms of goal variables
- And in terms of desired goal values (max,min,target, target range,etc.)

Sometimes, one knows an exact relation between goal variable(s) and instrumental variables such that an objective function can be defined.

In a lot of economics, management science and operational research we assume such relations exist!!

We'll come back to this issue at the end of the presentation

In Finance, we usually assume a *single goal*, e.g. the maximization of the value of the shares of the current shareholders or the maximization of expected utility.

Sometimes, maximization is *subject to constraints* (which then have absolute priority over the 'single' goal).

Contents

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Bodie & Merton:

"Finance is
valuation,
risk management and
optimization"

…optimization under uncertainty is not easy … :

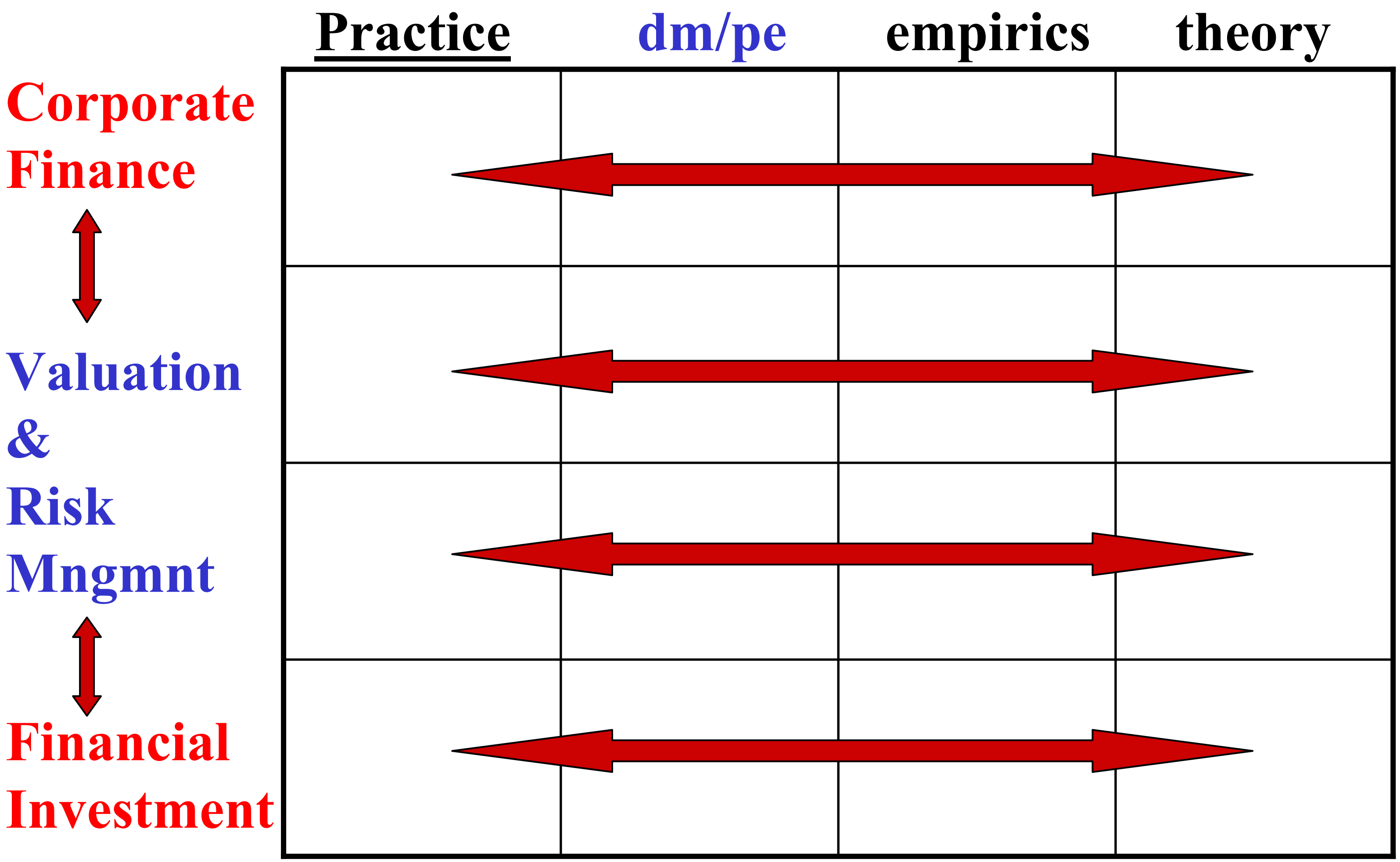
Domains and approaches

Academic approaches

	Practice	dm/pe	empirics	theory
Corporate Finance				
Valuation & Risk Mngmnt				
Financial Investment				

Integration needed!!!

Academic approaches



Finance research focus over the decades

- •seminal : narrative descriptive finance
  restrictive focus on instruments / institutions
  : institutional decision context
- •1950s : finance as decision science
  Markowitz' Portfolio Theory
- •1960-70s : OR ramification of fin.economic decision problems
  : OR techniques
- •1975 ff : sophisticated econometric descriptive finance
  statistical behavior of financial market prices
  : outcomes of aggregate decisions

To what extent can insights from descriptive finance serve as guidelines for financial decisions in practice ?

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- Depends on validity of assumptions wrt 'average' actors and
  wrt functioning markets and
  wrt 'context' in general
  for the actual 'non-average' actors and their context

- Sometimes the distance between average and non-average is not so big. Then theory may become very powerful:
  Look for instance at the success of Option Pricing Theory!

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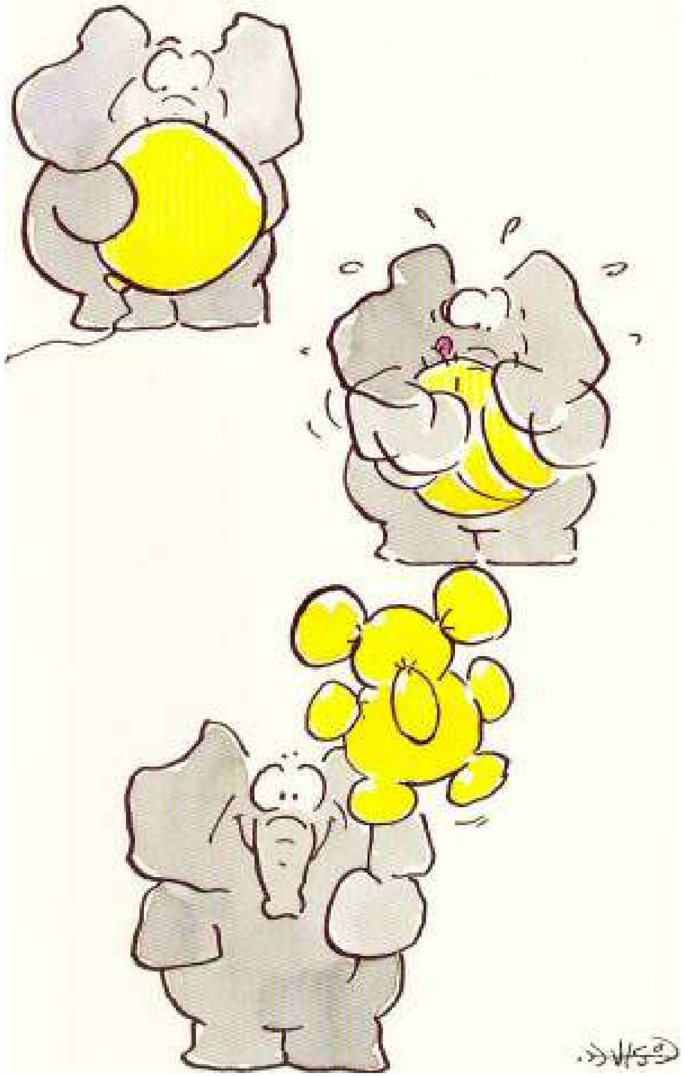
3.Average Decision Makers (Descriptive modelling)



introducing…. :

the representative
decision maker !

3.Average Decision Makers

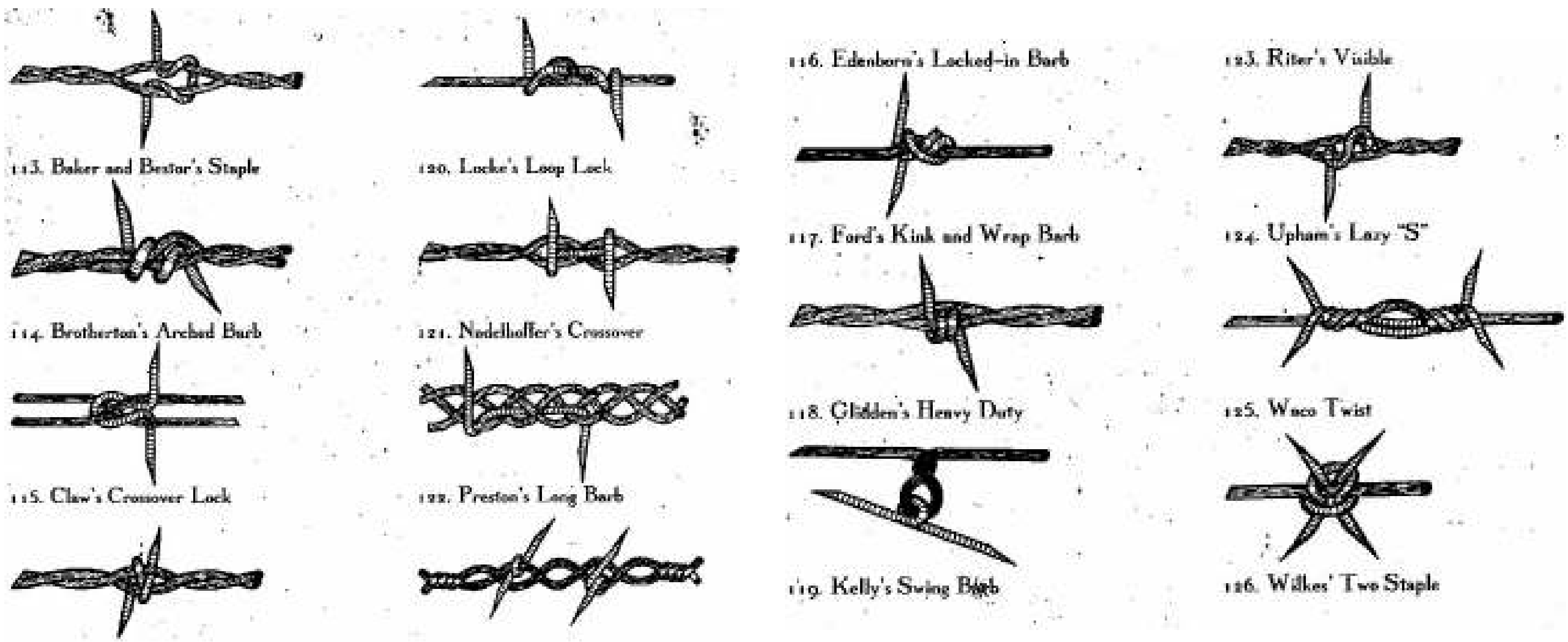
3.Average Decision Makers

- self-interested behavior, non-satiation
- efficient market hypothesis
- time preference
- risk aversion
- diversification
- risk-return trade-off

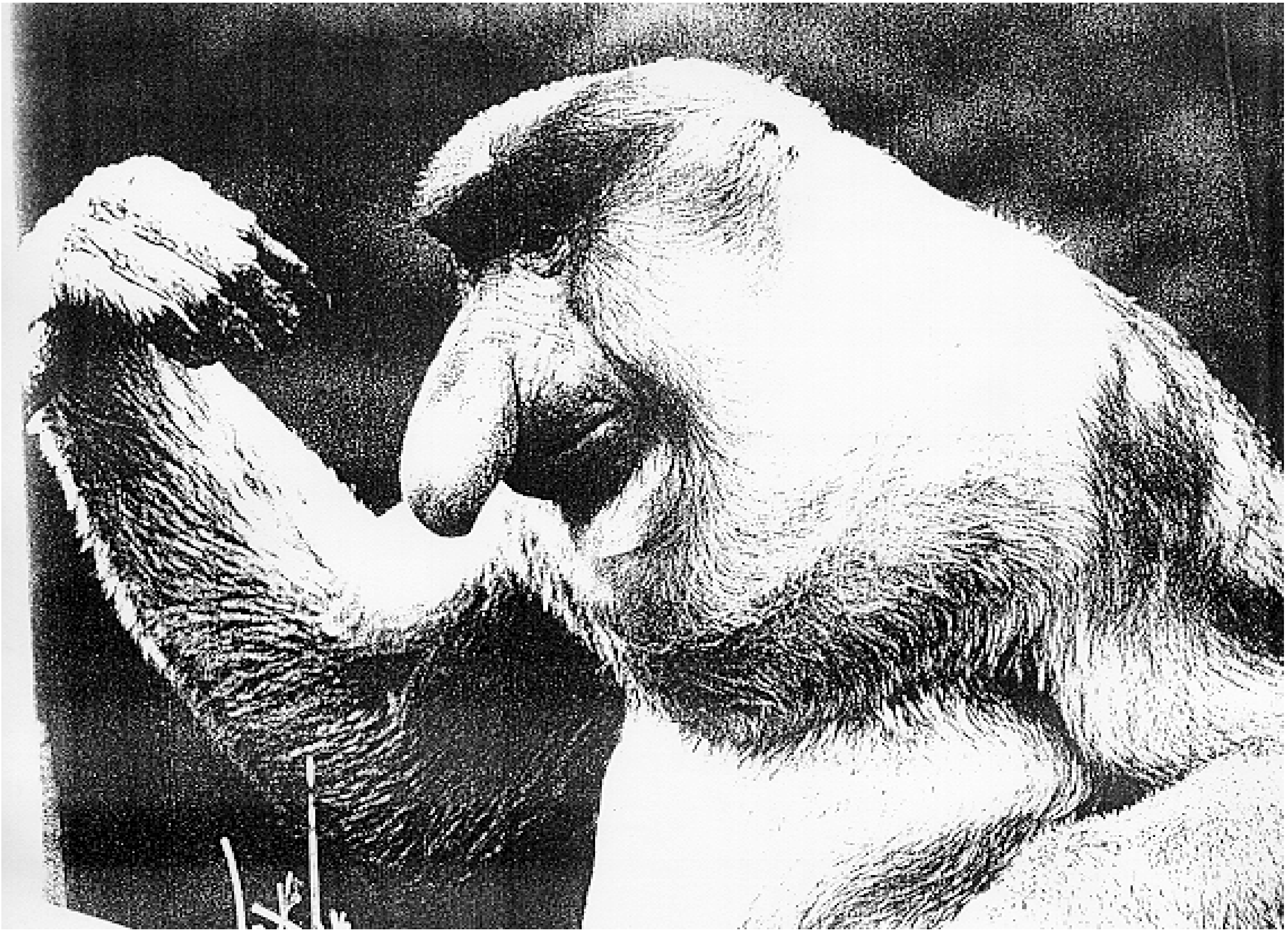
- no-arbitrage : exclude sure profits at no cost :
  normative portfolio revision
- equilibrium : market clearing :
  descriptive portfolio composition

3.Non-Average Decision Makers

- common denominators, but
- each decision situation requires a specific tailored solution：



3.Non-Average Decision Makers



Expected utility maximizing homo economicus ?

- set of choice alternatives :
  - not fixed / dynamic / constraints
- description of choice alternatives :
  - multiple attributes / representation of uncertainty
  - incomplete information / limited data processing
  - may change by learning
- representation of preference structure :
  - may change over time / by learning
- decision criterion :
  - satisfying / attainable result

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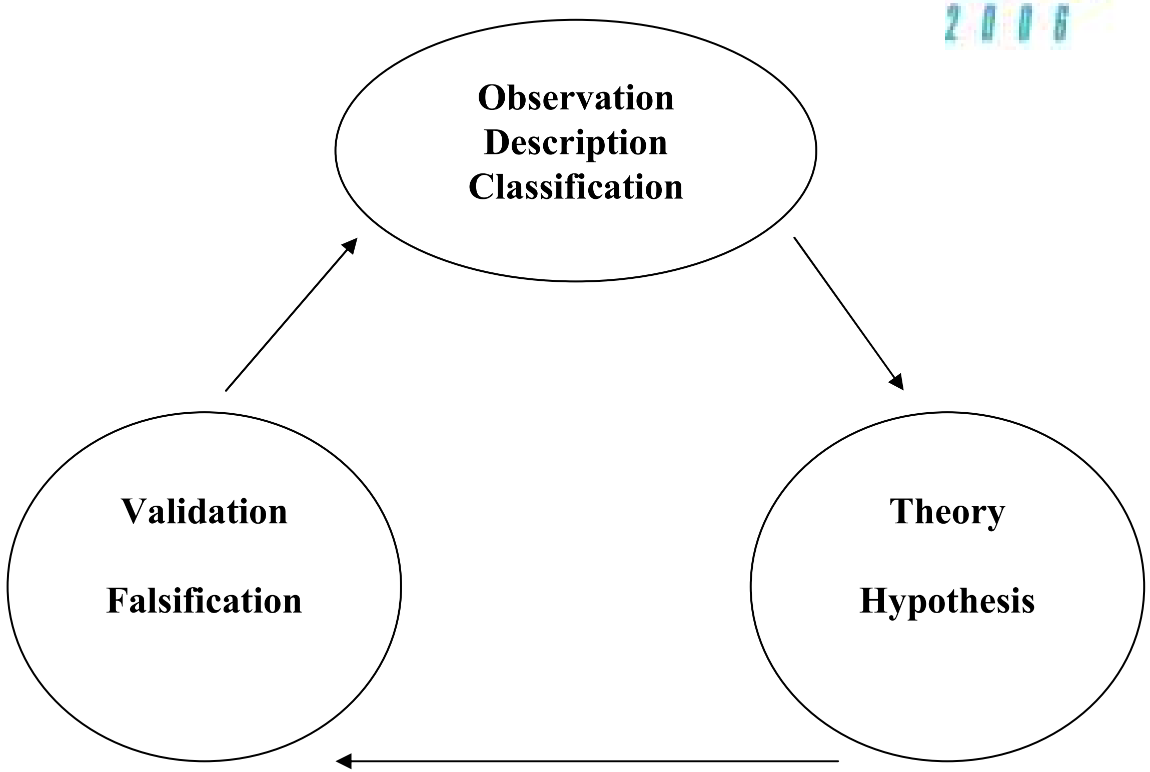

In addition to the usual Theoretical Cycle (above)

there is a

Decision Making – Performance Evaluation Cycle (following slide)

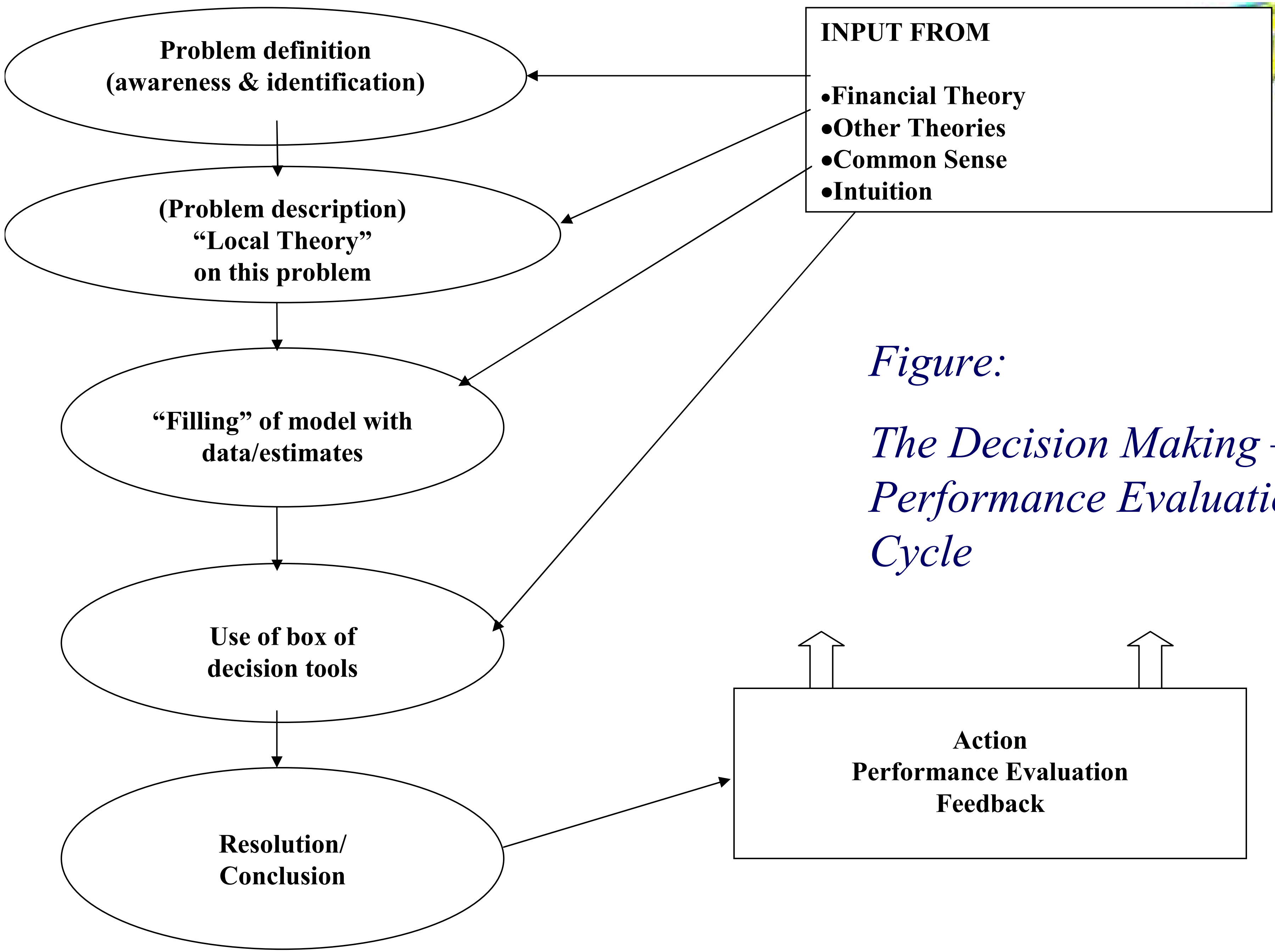

Figure:

The Decision Making – Performance Evaluation Cycle

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A.The Firm

B.The Investor

C.(Risk Management)

5.Why multiple goals in finance: The firm

Neo-classical view

Shareholders (= owners)

The only goal of the shareholders is to maximize financial wealth

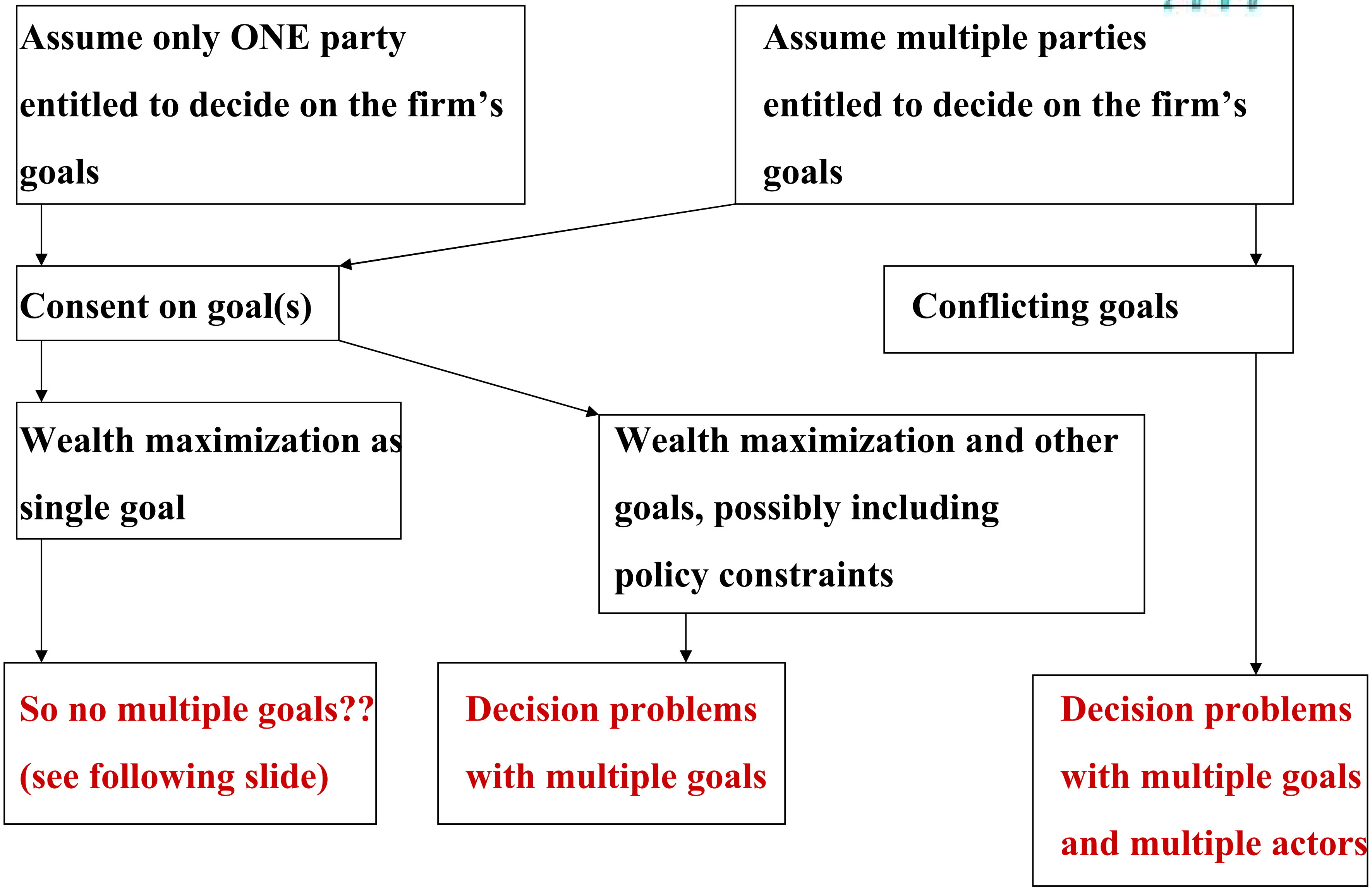
Because of their property rights the shareholders are entitled to determine the firm's objectives

The firm's only goal is to maximize its contribution to the wealth of the shareholders

- **This view is embedded in large framework of stylized thinking in economics and law: (general equilibrium, property rights theory, limited liability shareholders, etc.).**

- **However, the societal impact of the firm and its governance structure is a growing topic of debate and discussion.**

5.Why multiple goals in finance: The firm



5.Why multiple goals in finance: The firm

- Assume only ONE party entitled to decide on the firm's goals
- Consent on goal: Wealth maximization as single goal
- So no multiple goals??

Provided:	claims well defined	If not, possibility of games: your results depends on decisons by others, internal & external
Provided:	clear picture of cash flows	If not, often multiple risk measures e.g. exposure estimates
Provided:	financial markets as benchmark	If not, individual decision context or market circumstances may bring more goals

Otherwise: Decision problems with multipe goals!

Contents

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4. Decision Making & Performance Evaluation
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6.Conclusions

- Most problems in finance involve multiple goals
- Often there are no easy solutions: (in)(visible) (hand)(icap)
- Decision makers are confronted with dynamic goal complex
- Limitations of goals-instruments thinking
- Modern decision and performance evaluation technologies have a lot to offer – and so do many insights from financial theory and from empirical studies
- However:

  There is a lot to win by integrating these approaches!
- Decision makers do and have to take positions.

Call for integration


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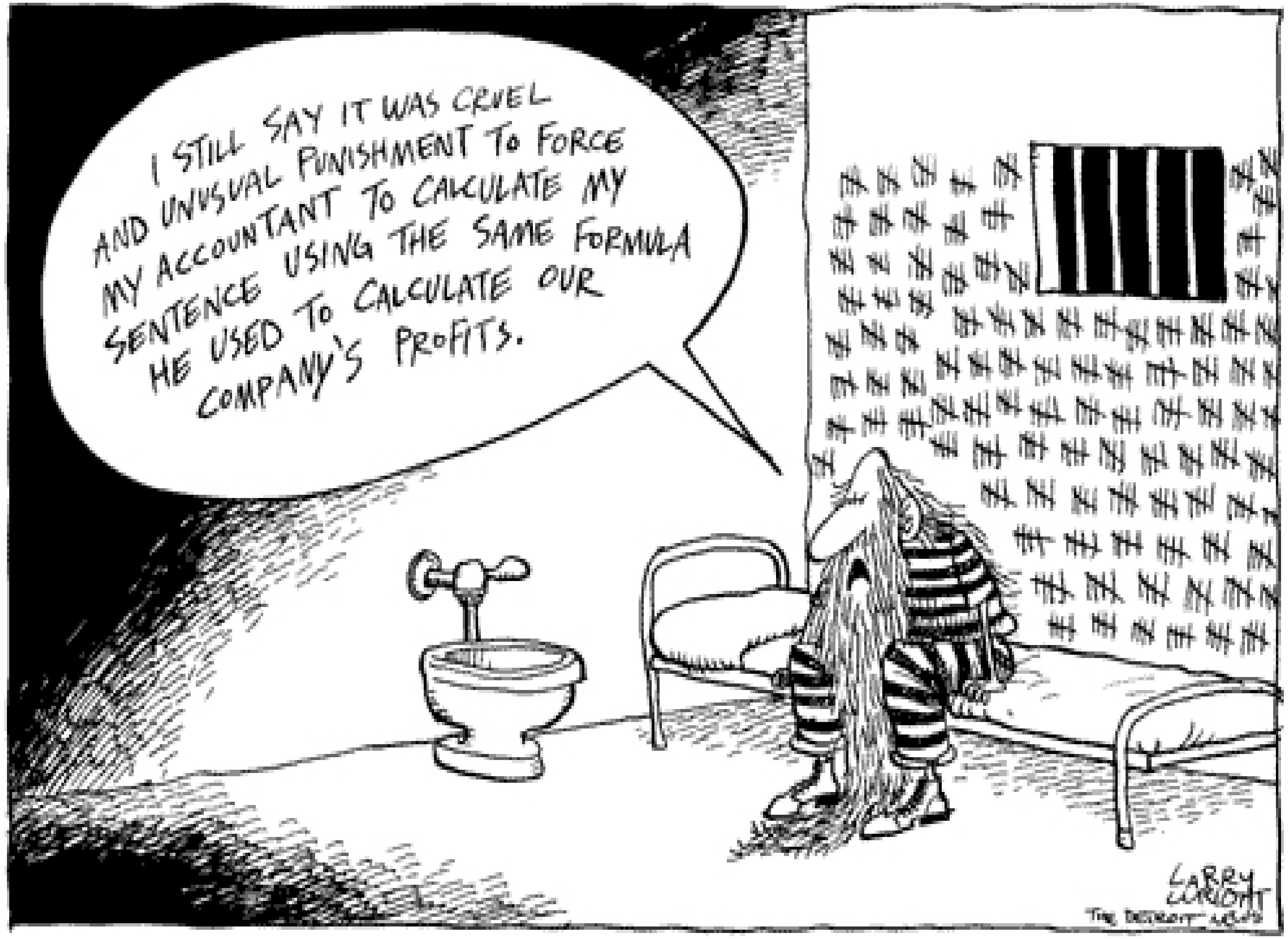
I STILL SAY IT WAS CRUEL AND UNUSUAL PUNISHMENT TO FORCE MY ACCOUNTANT TO CALCULATE MY SENTENCE USING THE SAME FORMULA HE USED TO CALCULATE OUR COMPANY'S PROFITS.
LARRY WRIGHT
THE DETROIT NEWS

The case for a single goal:

Neo-classical finance: Maximize expected utility with utility defined in terms of future wealth or holding period return and the utility function is confronted with the probability distribution of future investment returns

Markowitz Equates risk with variability of portfolio returns, which is then measured by (co-) variance or standard deviation

Assuming Quadratic utility and/or specific characteristics of the pdf's

Reasons for multiple goals

- Distinguish between downside risk and upside potential ('a matter of taste', asymmetric return distributions)
- Returns may be viewed as being generated by several underlying state variables. One may then want to use multidimensional risk profiles composed of the sensitivities for unexpected changes in these state variables
- Personal decision context, e.g. tax or liquidity considerations
- 'Stylish' attributes, such as firm size. P/E, B/P, CF/P, etc.
- Asset allocation issues such as country or region, industry, etc.