The relevance of MCDM for financial decisions and performance evaluation

Part 2. Performance Evaluation

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caveat:

“Marry me, Judith... with the understanding, of course, that past performance is not a guarantee of future results.”
PERFORMANCE EVALUATION

Program

• definition
• who does it?
• why do it?

• a race between Smith and Jones
• the amount of comparable cases
  • monkeys as investors
PERFORMANCE EVALUATION: WHAT IS IT?

A process,

Concerning (1) some activity which is
Evaluated in terms of (2) some performance question
By choosing (3) performance attributes
And (4) measuring the scores on these attributes
And (5) judgment of the resulting scoring profile
(ad 1) **Definition activity should answer following questions:**

a. Who is responsible for activity?

b. Which instrumental variables, which constraints?

c. What objectives are pursued?

**Plus:**  
Agency problems  
Strategic behaviour
(ad 2) What is purpose of performance evaluation concerned?

What do you want to find out and why?

Perspective evaluator may be different from perspective ‘producer’ of activity
(ad 3) Choice performance attributes

What attribute variables

Ex ante, each performance attribute is a random variable

Normally, there are expectations and/or aspirations wrt the ex post attribute values:

e.g. maximise/minimise/targets/target ranges
(ad 4) Measurement scores on attributes

direct measurement vs. measurement by proxies

choice measurement scales

measurement errors
(ad 5) Judgment of scoring profile(s)

Some questions in PE:

Activity well done?
Who is the best?
Ranking
What can we learn?
PERFORMANCE EVALUATION: WHO DOES IT?

Everybody does it!
PERFORMANCE EVALUATION: WHY DO IT?

1. For fun
2. For the (historical) records
3. For competitions
4. For pricing through rating systems (credit rating, tennis players)
5. For learning how to get better performance, a. by changing the activity, b. by changing the actor
PERFORMANCE EVALUATION: TWO HEALTH WARNINGS

Example: Consider Smith and Jones, each trying to cover a distance of 10 kilometers as quickly as possible.

Results: Jones 31’
Smith 29’

Question: Who is the best athlete?
Two general problems

A. Comparability cases
B. Effect uncertainty

In other words:

Past performance is

partly determined by the characteristics of the cases
and

partly by the effect of uncontrollable risk factors
Judgment of scoring profile(s)

Solution comparability problem

1. grouping of cases; then use of averages
2. find relation between performance attributes and characteristics  e.g. statistics
   e.g. d.e.a.
   e.g. rough sets
Judgment of scoring profile(s)

Solution to problem of uncontrollable risk factors

1. identify sources of risk (uncontrollable)
2. estimate sensitivity performance for changes in these risk factors
3. correct performance for

*Sensitivity times Unexpected change*
Judgment of scoring profile(s)

By solving problems A and B, part of performance is explained.

We should learn from unexplained part study benchmark, e.g. the best e.g. the average.
FRAMING THE PERFORMANCE EVALUATION PROCESS

frequency $\rightarrow$ P(unexplained)
**PERFORMANCE EVALUATION: INFORMATION AVAILABLE**

Quality of judgment depends a.o. on availability of information:

<table>
<thead>
<tr>
<th>Number of Cases</th>
<th>Comparison Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>one case</td>
<td>compare with ‘norm’</td>
</tr>
<tr>
<td>two plus cases</td>
<td>pair wise comparison (incl. benchmarking)</td>
</tr>
<tr>
<td>good sample</td>
<td>a.o. statistical techniques, DEA</td>
</tr>
<tr>
<td>all cases</td>
<td>full description</td>
</tr>
</tbody>
</table>

What follows is an example of the ‘full description’ situation
The Wild Monkey Approach to Performance Evaluation

Objective:

Development of a framework for the evaluation of the performance of a portfolio managed over a certain period of time, where the portfolio possibly has to satisfy a series of constraints (both institutional and policy constraints).
Given time period, opportunity set and constraints,
We are interested in the set of all possible portfolios that could have been formed at the beginning of the period and the performance of every single portfolio at the end of the period, assuming (for the moment) static, buy-and-hold, policies

So...>>> Create level playing field
And.>>> Compare managed portfolio with all possible
frequency portfolios

managed portfolio

criterion values
We work with many different monkeys...

...They all perform differently
Example: July 1997

AEX

-4% -2% 0% 2% 4% 6% 8%

71% 29%
Monkeys and the AEX in year until March 2001