

Investigating the Future of Global Performance Measurement

Performance Attribution Roundtable

Date: May 2008

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Agenda

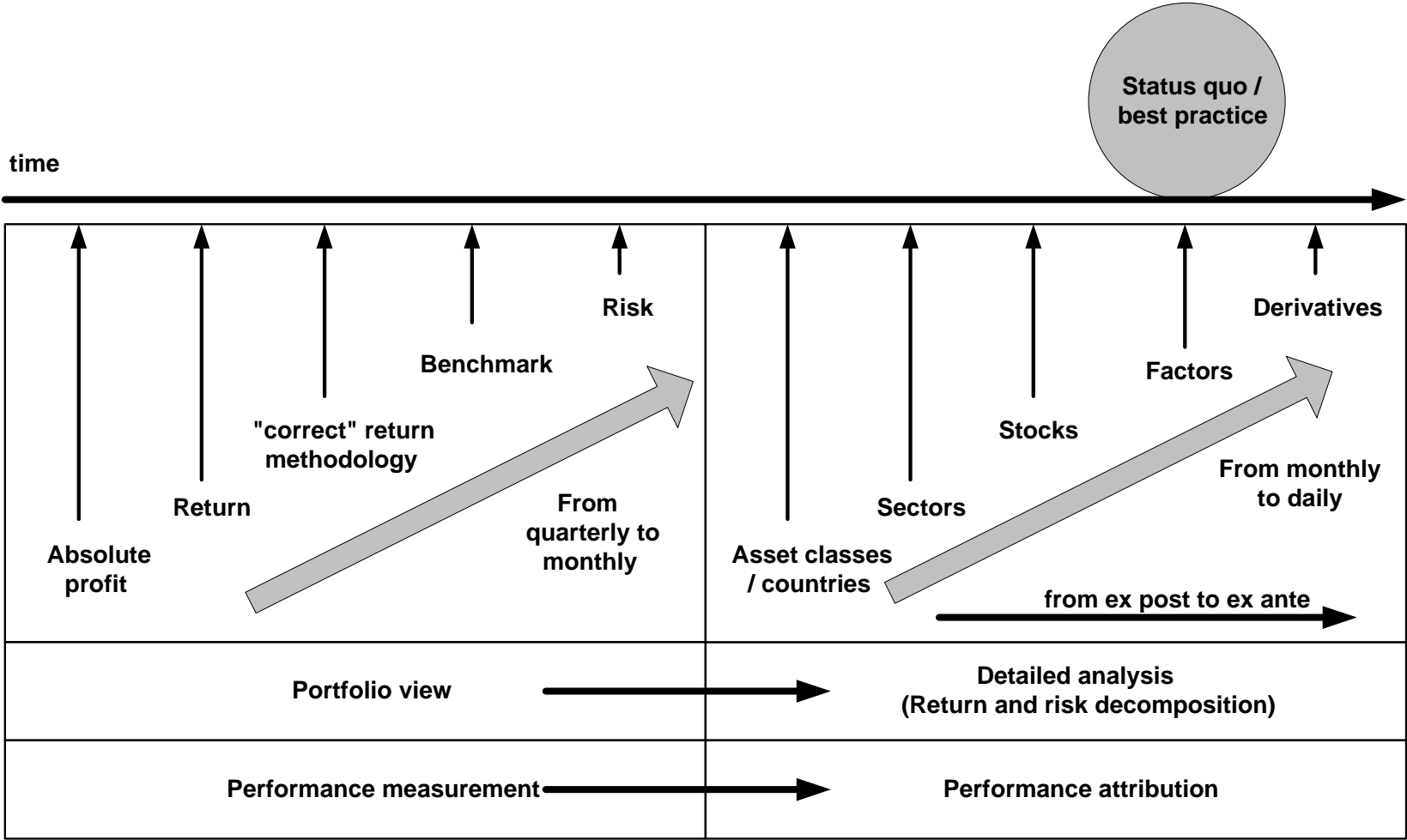
- What happened in the last 10 years ?
- What are the current trends ?
- What will happen in the next 10 years ?
- What is the biggest challenge in mastering the future ?
- Final remarks
- Comments & Questions

What happened in the last 10 years ?

Typical circumstances 10 years ago

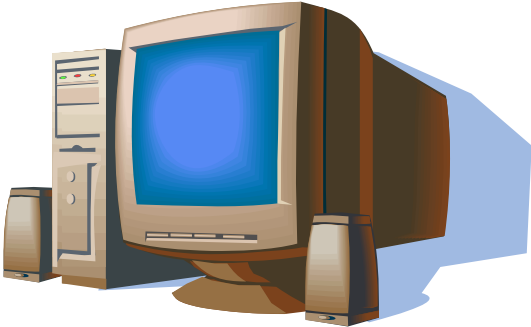
- hardly any performance databases established
- no performance reporting tool
- return attribution or risk attribution rarely provided
- monthly return calculation on portfolio level using the original Dietz method
- trade date accounting or accrual accounting for dividends rarely undertaken
- AIMR-PPS hardly known and implemented
- performance monitoring or risk management framework, if at all only partly implemented
- no educational program for performance specialists
- ...

Developments in performance measurement / attribution

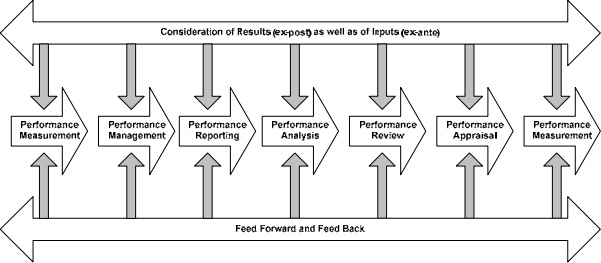


Review of the last 10 years - what happened ?

G · I · P · S
Global Investment Performance Standards



CIPM
CERTIFICATE IN INVESTMENT
PERFORMANCE MEASUREMENT

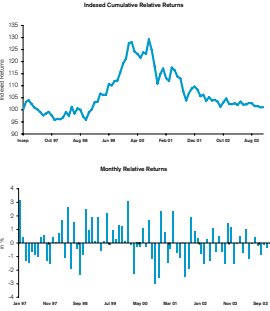


Equities World BM MSCI active Mandates direct

	Periodical Returns in %		
	Composite	Benchmark	Relative
1 Month	1.27	1.60	-0.33
3 Months	6.95	7.17	-0.22
6 Months	8.64	9.26	-0.62
1 Year	17.68	19.64	-1.96
2 Years	-12.26	-10.46	-1.80
3 Years	-13.77	-11.82	-1.95
4 Years	-13.51	-11.82	-1.67
5 Years	-2.31	-2.40	0.10
Since Inception	4.63	5.25	-0.62

	Calendar Year Returns in %		
	Composite	Benchmark	Relative
YTD	17.68	19.64	-1.96
2000	17.68	19.64	-1.96
2001	-35.70	-32.50	-3.20
2002	-15.64	-14.47	-1.17
2003	-13.46	-11.84	-1.62
1999	60.21	46.07	14.14
1998	21.50	17.51	3.99
1997	22.63	26.25	-3.62

	Composite	Benchmark
	Volatility over 1 Year	16.50
Volatility Since Inception	22.98	20.52
Sharpe Ratio over 1 Year	1.05	1.24
Sharpe Ratio Since Inception	0.70	0.70
Tracking Error over 1 Year	2.12	N/A
Tracking Error Since Inception	4.62	N/A
Information Ratio over 1 Year	-0.78	N/A
Information Ratio Since Inception	-0.50	N/A
Correlation over 1 Year	0.99	N/A
Correlation Since Inception	0.98	N/A



by MSCI Sector	Asset Allocation	Stock Selection	Interaction	Total
Consumer Discretionary	0.00%	-0.95%	-0.03%	-0.99%
Consumer Staples	0.05%	0.28%	0.03%	0.36%
Energy	0.00%	-0.19%	-0.02%	-0.21%
Financials	-0.10%	-0.21%	0.01%	-0.30%
Health Care	0.20%	-0.35%	-0.03%	-0.18%
Industrials	0.04%	0.99%	0.12%	1.07%
Information Technology	0.21%	0.93%	0.01%	1.15%
Materials	0.01%	-0.28%	-0.08%	-0.35%
Telecomm Services	-0.11%	0.21%	-0.08%	0.03%
Utilities	0.02%	0.74%	-0.41%	0.35%
Cash	-0.78%	0.00%	0.00%	-0.78%
Total	-0.96%	0.13%	-0.49%	-1.32%

Risk Model : Global	Portfolio	Benchmark
Number of Securities	67	1 550
Number of Currencies	8	0
Portfolio Value	84 334 091	
Total Risk (ex-ante)	18.81%	18.21%
- Factor Specific Risk	18.66%	18.18%
- Stock Specific Risk	2.39%	1.02%
Tracking Error (ex-ante)	2.57%	
Relative Value at Risk	3 970 469	
Ex-ante	0.98	
Beta-adjusted Risk	18.64%	18.21%
Predicted Beta	1.02	
Predicted Dividend Yield	1.86	2.01
P/E Ratio (E: 12 months)	28.39	26.00
P/B Ratio (E: year-end)	2.58	2.56

Risk Model : Global	Portfolio	Benchmark
Total Risk (ex-ante)	18.81%	1.50%
- Factor Specific Risk	18.66%	0.18%
- Region	1.44%	0.78%
- Country	2.64%	0.27%
- Industry	1.44%	0.27%
- Fundamental	1.44%	0.27%
- Currency	8.42%	0.52%
- Covariance (+/-)	9.95%	2.08%
Stock Specific Risk	2.59%	2.08%

Current status of performance measurement

(1/2)

- performance databases established and performance reporting tool implemented
- return attribution for equity and fixed income portfolios is common practice
- risk attribution for equity and fixed income portfolios established in part
- specific performance analytics for specific products partially performed
- daily return calculation on portfolio, as well as, stock level
- trade date accounting and accrual accounting for dividends
- GIPS as the global PPS is broadly known and implemented
- performance monitoring and/or risk management framework partially implemented

Current status of performance measurement

(2/2)

- CIPM Program as the first certification program for performance specialists
- performance measurement seen as important support function for marketing and controlling / compliance departments
- more often, performance measurement is seen as value added function
- performance measurement, data management and client reporting moved together more closely
- industry organizations addressing performance measurement and presentations
- regulators started to look at performance measurement and presentations
- ...

What are the current trends ?

Hot topics on performance measurement

increasing needs of

- asset managers
- clients

increasing requirements from

- regulators
- industry organizations



increasing issues because of lack in

- know-how / experience
- training programs for clients

increasing requirements for

- data providers
- software vendors

Increasing asset manager needs

- **increasing requirements on performance analytics**
 - => increased level of detail
 - => better data and herewith reporting quality
 - => better coverage of the managed portfolios, including multi-asset class portfolios, hedge funds, derivatives, etc.
 - => ...
- **increasing reporting needs**
 - => more detailed information
 - => more flexibility on analytics and report design
 - => higher frequency of report delivery
 - => more reports available online
 - => ...

Increasing client needs

- increasing pressure to provide analytics also from the client's point of view
 - => client return versus portfolio manager analytics
 - => addressing the absolute and less the relative analytics, especially for private clients
 - => ...
- increasing pressure to provide analytics also for client's total assets
 - => including external assets (real estate, private equity, assets held with other custodians, advisory accounts)
 - => ...
- providing more reporting and analytics to clients to meet their MIS and data needs

Increasing (self-)regulation

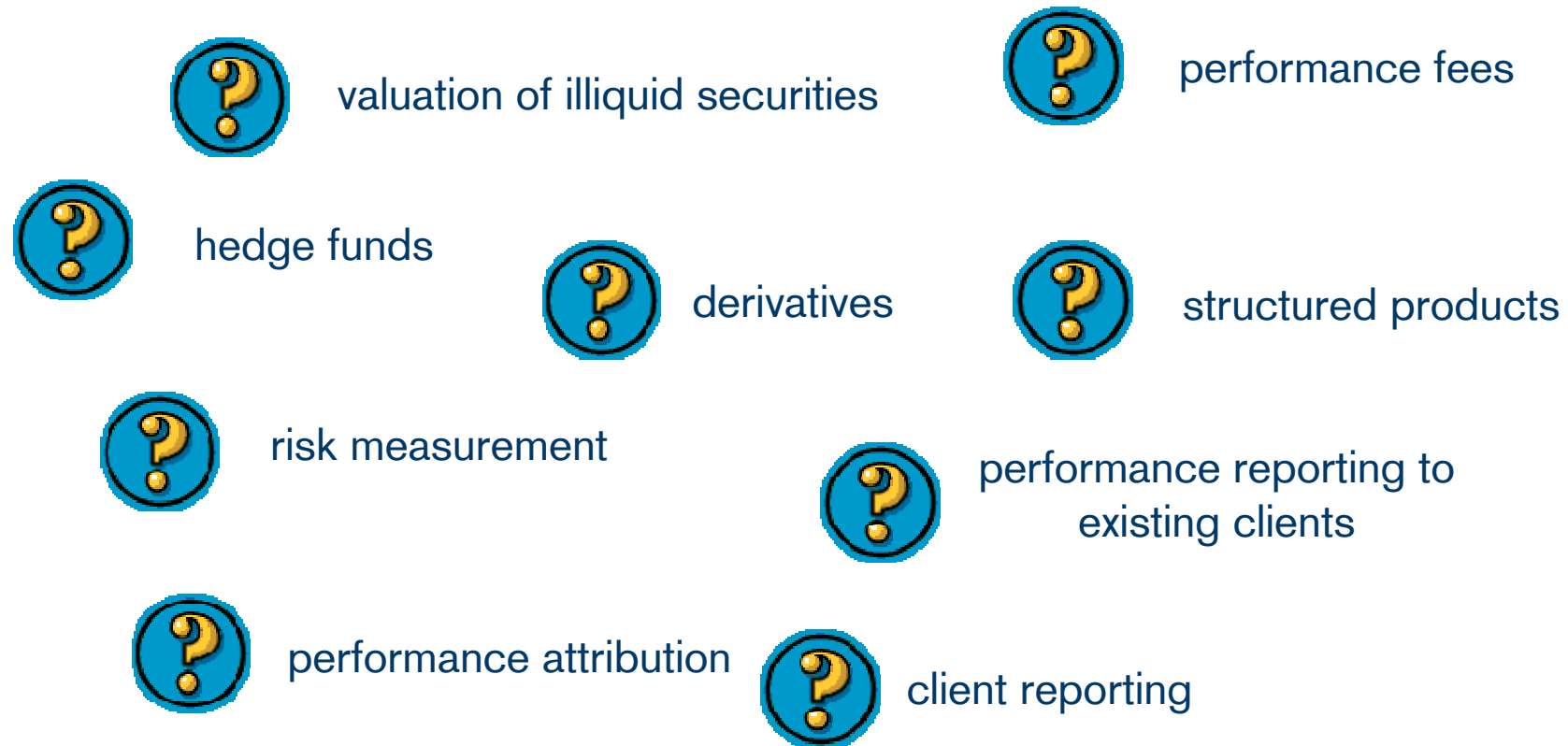
(1/2)

- **increasing regulations by the European authorities**
 - => for example UCITS or MiFID
 - => more protection of the investors by requiring more transparency and through addressing performance presentations and risk measurement aspects
 - => ...
- **further development of the performance presentation standards**
 - => GIPS 2010
 - => new areas to be covered (performance attribution, client reporting, valuation, etc.)
 - => other performance presentation related standards (mutual funds, private equity, real estate, etc.)
 - => ...

Increasing (self-)regulation

(2/2)

- increasing need for guidance on performance related issues



Increasing need for education and training

- broader acceptance and use of educational / training programs
 - => like the CIPM program
 - => ...
- integration of performance analytics or performance monitoring in portfolio management training
 - => as part of the investment process
 - => as part of the quality assurance process
 - => ...
- more training programs for the (end-)investors
 - => not only tailored to a portfolio manager perspective
 - => to also address the client specific analytics as well
 - => ...

Increasing technical discussions / requirements (1/2)

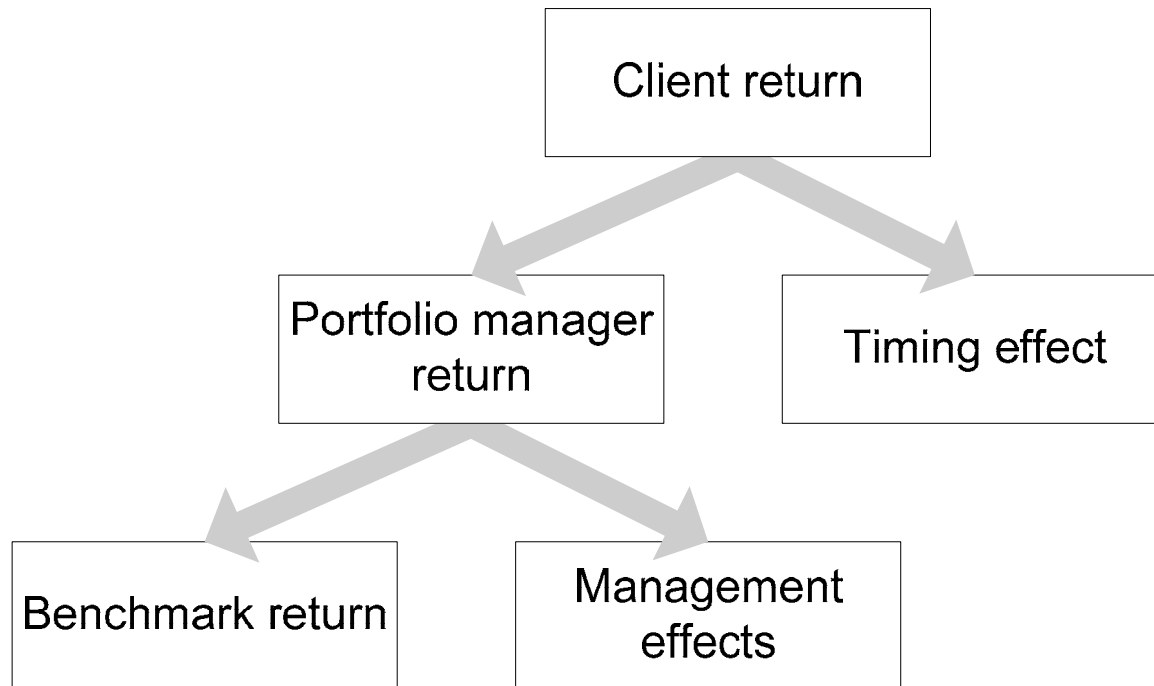
- increasing debates on the shortcomings and the appropriateness of certain calculation methodologies
 - => development of a comprehensive return and risk calculation framework
 - => economical interpretation of calculation techniques
 - => ...
- increasing needs for developing risk models
 - => to better reflect existing products or investment processes
 - => to better address the risk view from clients
 - => ...
- increasing pressure on software vendors to provide the necessary tools for the performance analytics
 - => ...

Increasing technical discussions / requirements (2/2)

- **increasing need for daily securities and benchmark data**
 - => reference data as well as prices
 - => look-through for indirect investments or structured products
 - => ...
- **increasing need to automatically incorporate "external" data**
 - => from different sources / custodians or other externally held investments
 - => ...
- **increasing need for integrated solutions**
 - => consistent use of calculation methodologies
 - => consistent data throughout all systems and analytics
 - => ...

What will happen in the next 10 years ?

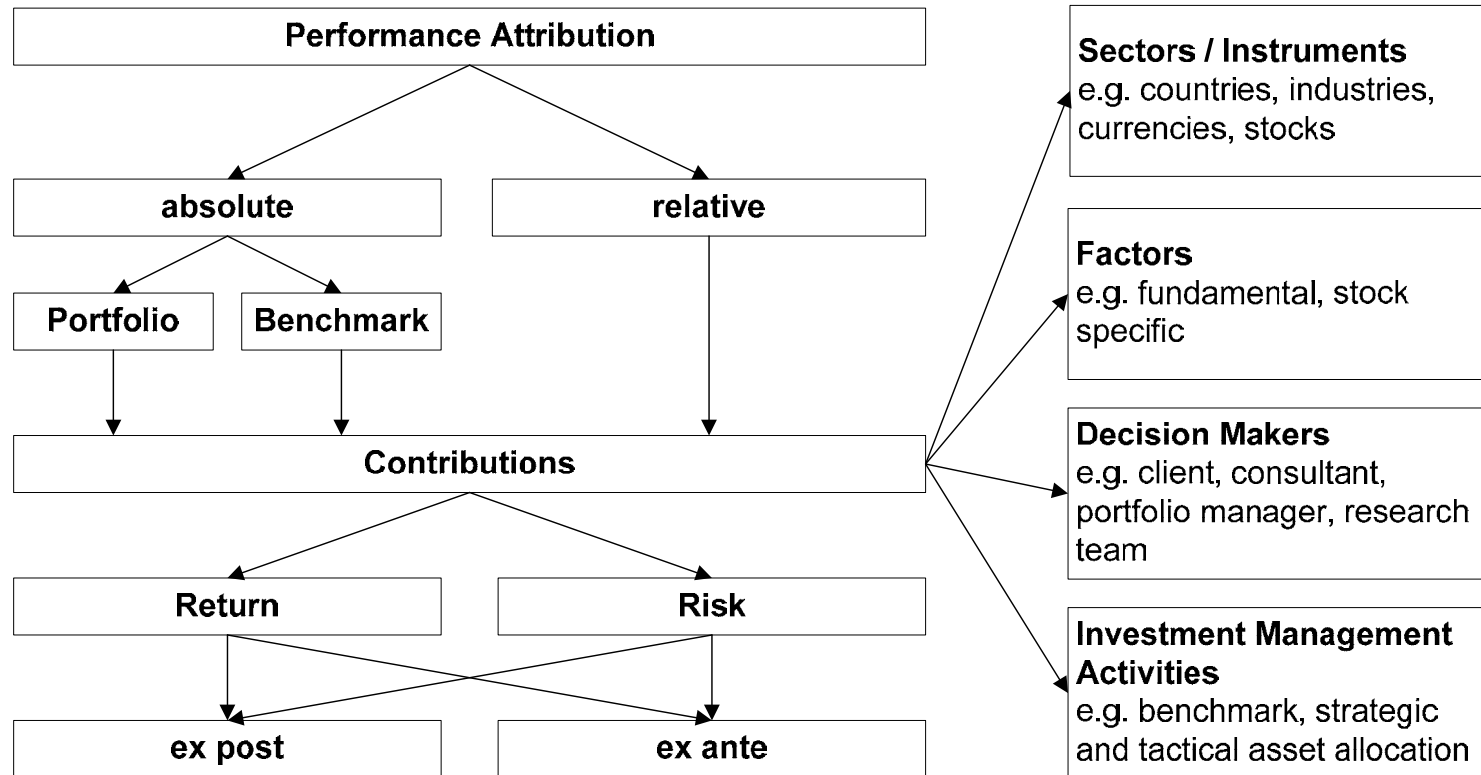
Performance measurement



■ comprehensive performance measurement framework established

Performance attribution

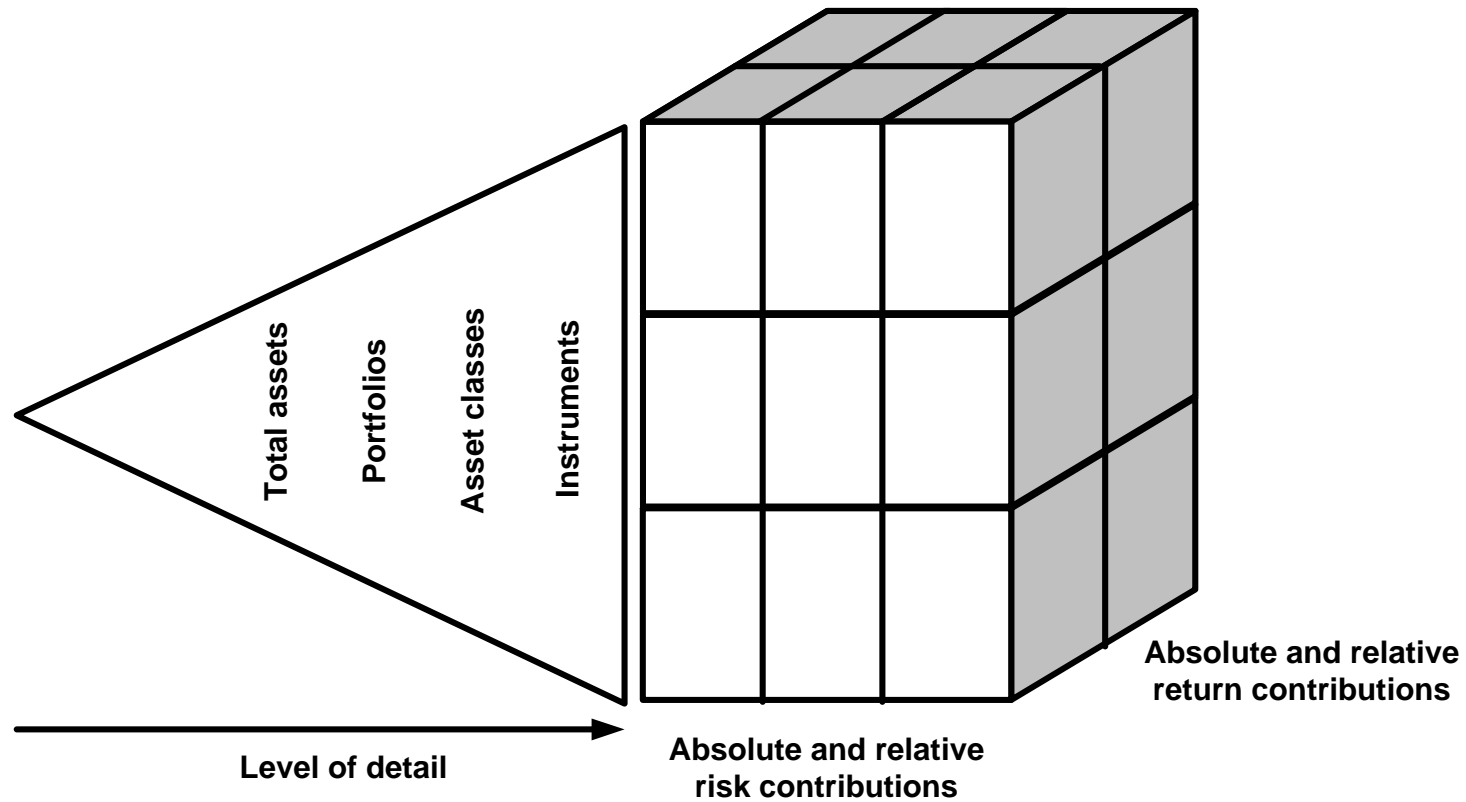
(1/4)



■ all kind of performance analytics available

Performance attribution

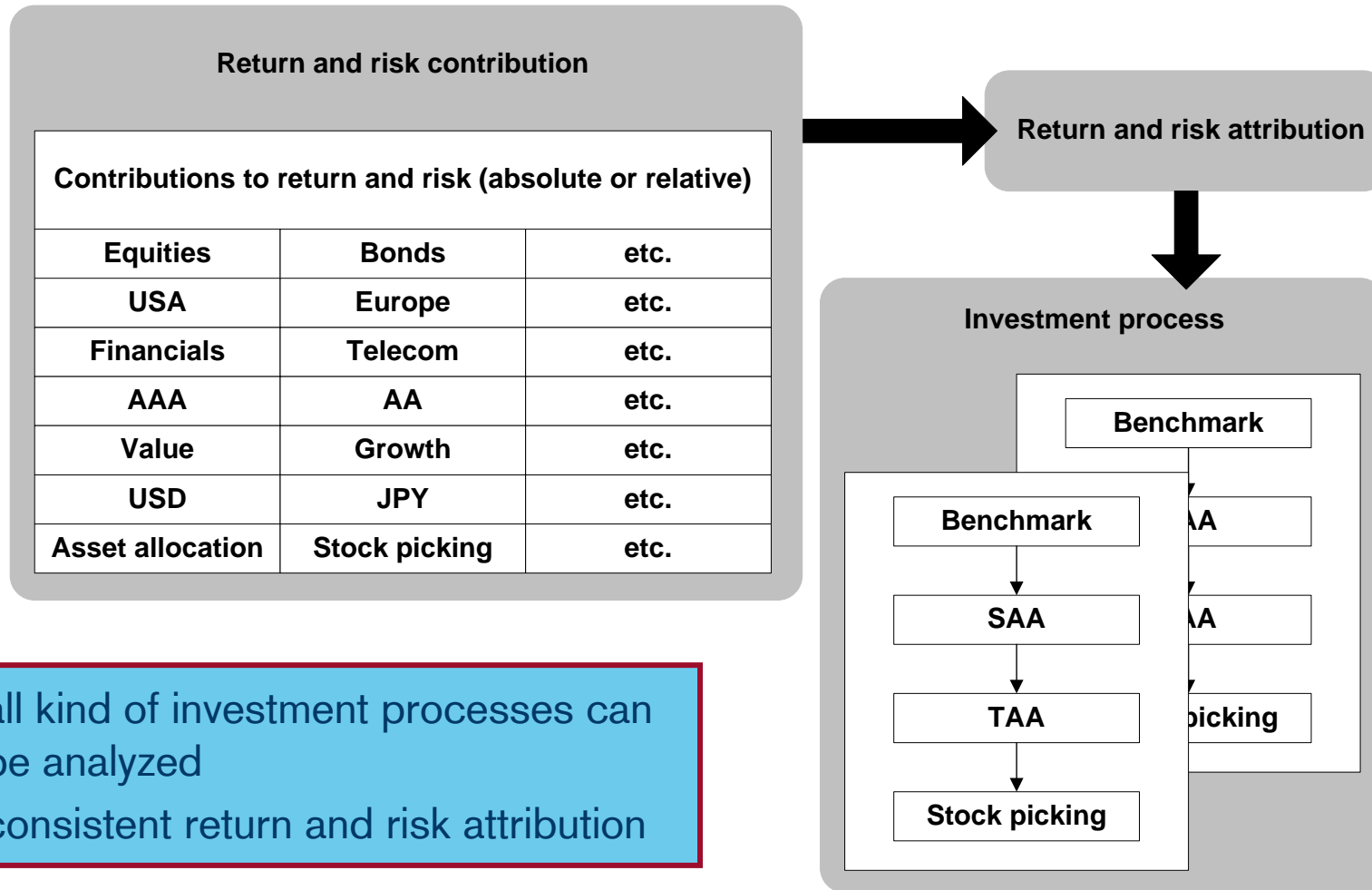
(2/4)



■ "slice & dice" performance analytics available

Performance attribution

(3/4)



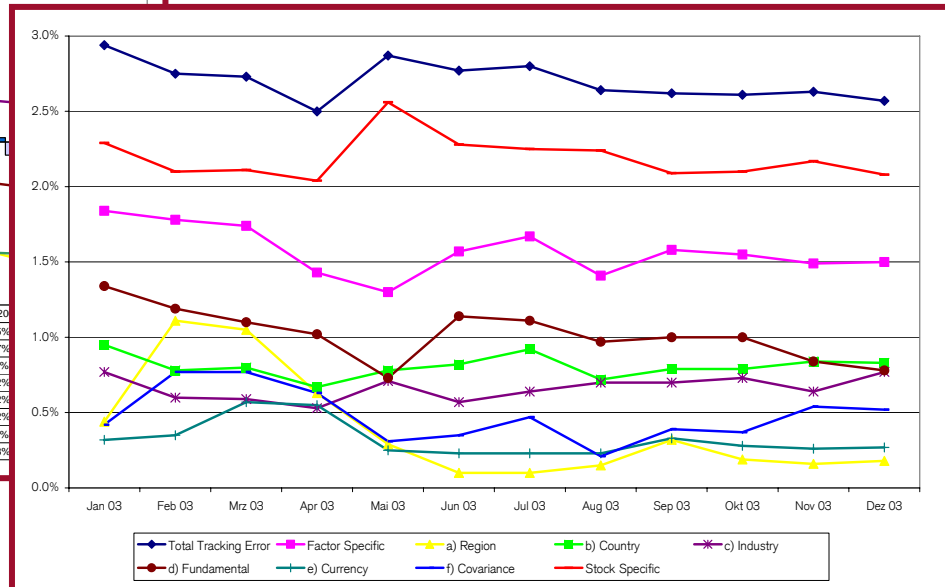
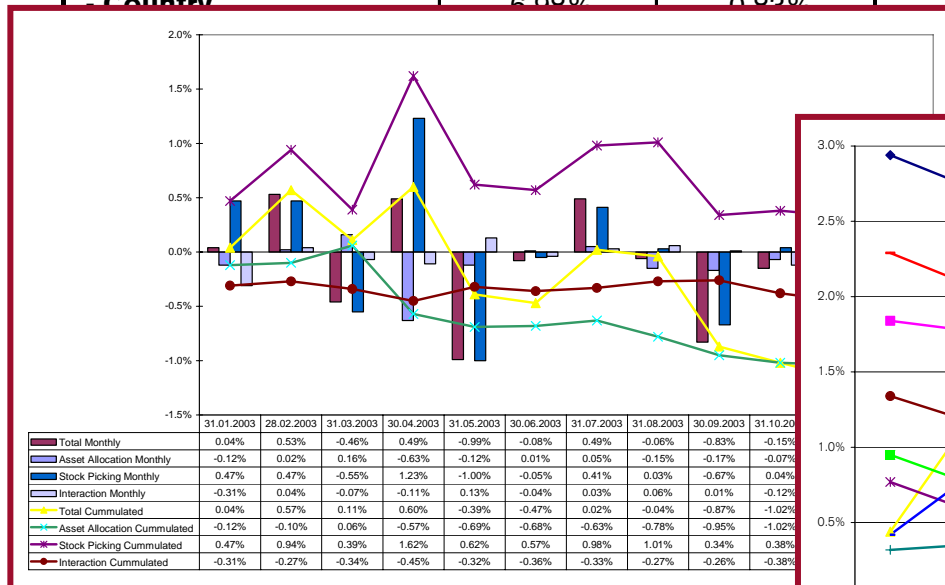
- all kind of investment processes can be analyzed
- consistent return and risk attribution

Performance attribution

(4/4)

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■ risk and return measurement not only on a static but dynamic basis



Risk attribution

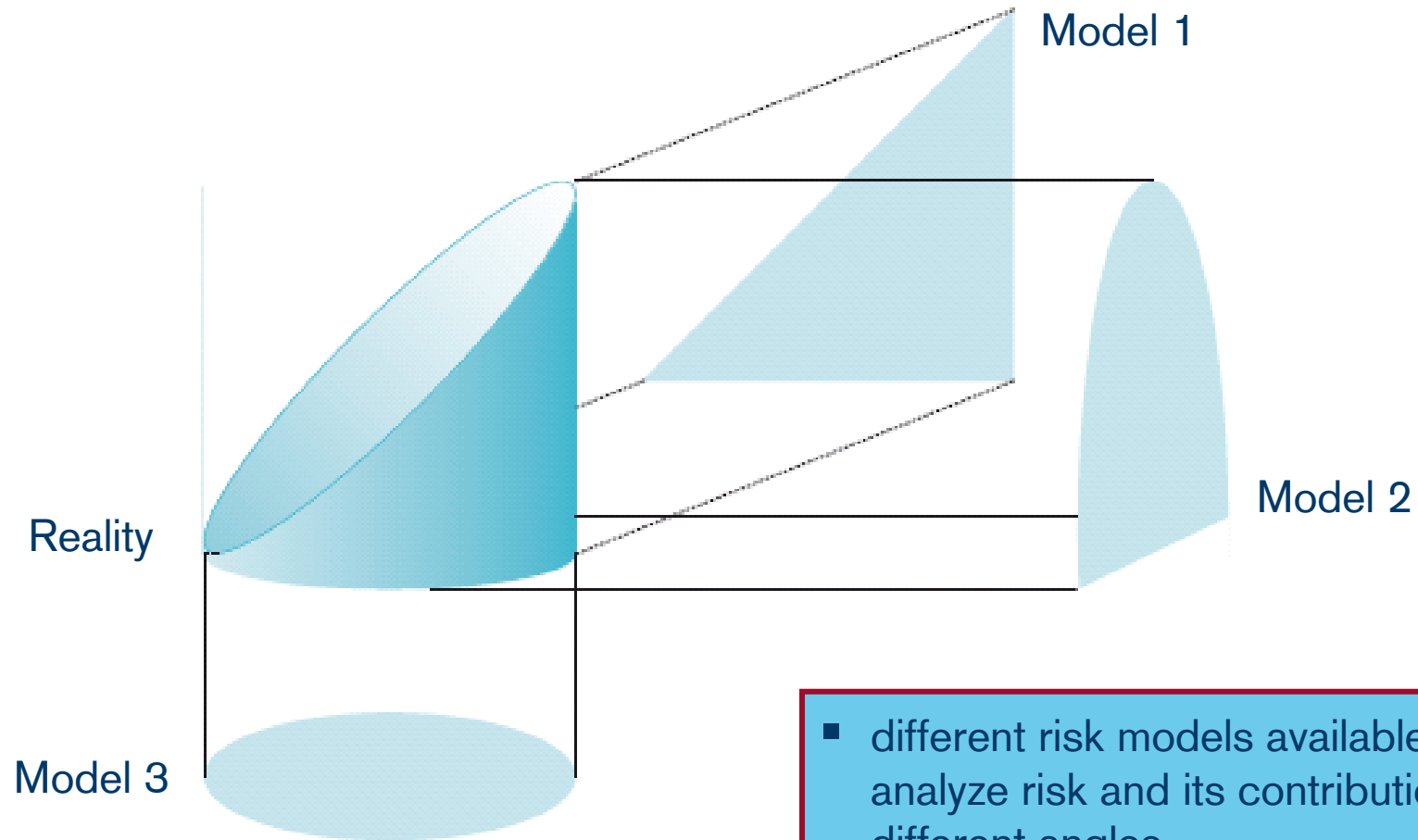
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- all securities can be mapped
- impact of liabilities and leverage can be analyzed
- all risk factors are relevant for the decision makers
- all risk factors are empirically significant
- risk models have a high degree of accuracy and very small estimation errors
- ...

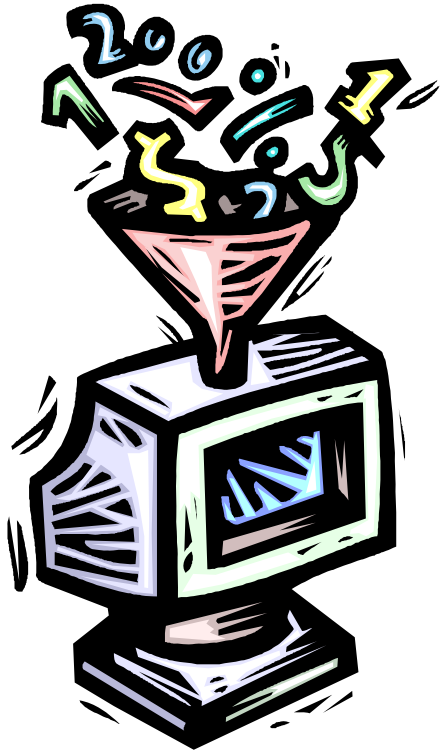
■ risk attribution reflects full investment universe and the whole investment process

Risk models



■ different risk models available to analyze risk and its contributions from different angles

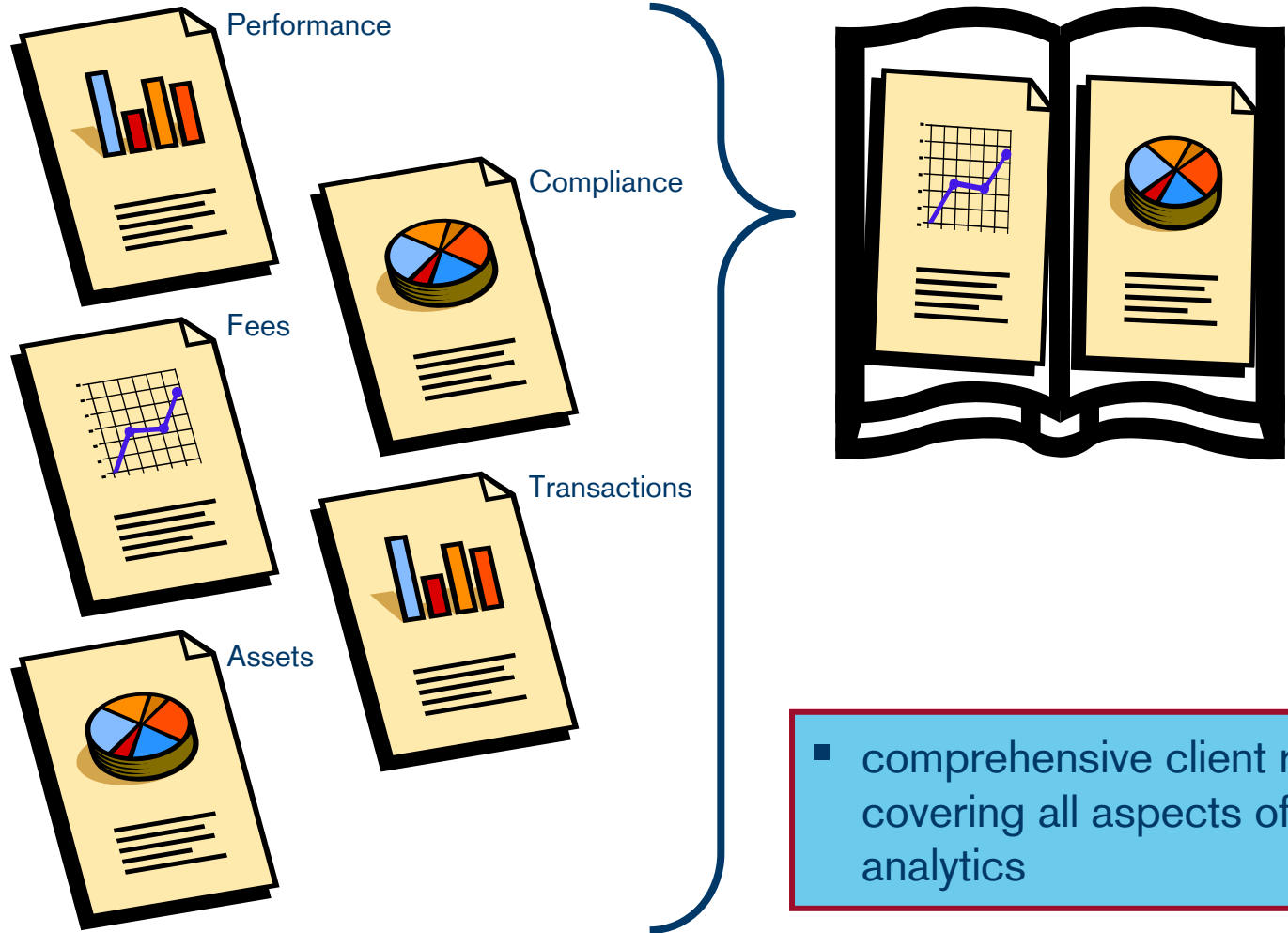
Data management



- all reference data is available for securities - same for benchmark constituencies - on a daily basis
- look-through is common practice
- custodians and banks share the necessary data and information
- standard interfaces implemented for sharing data and information
- ...

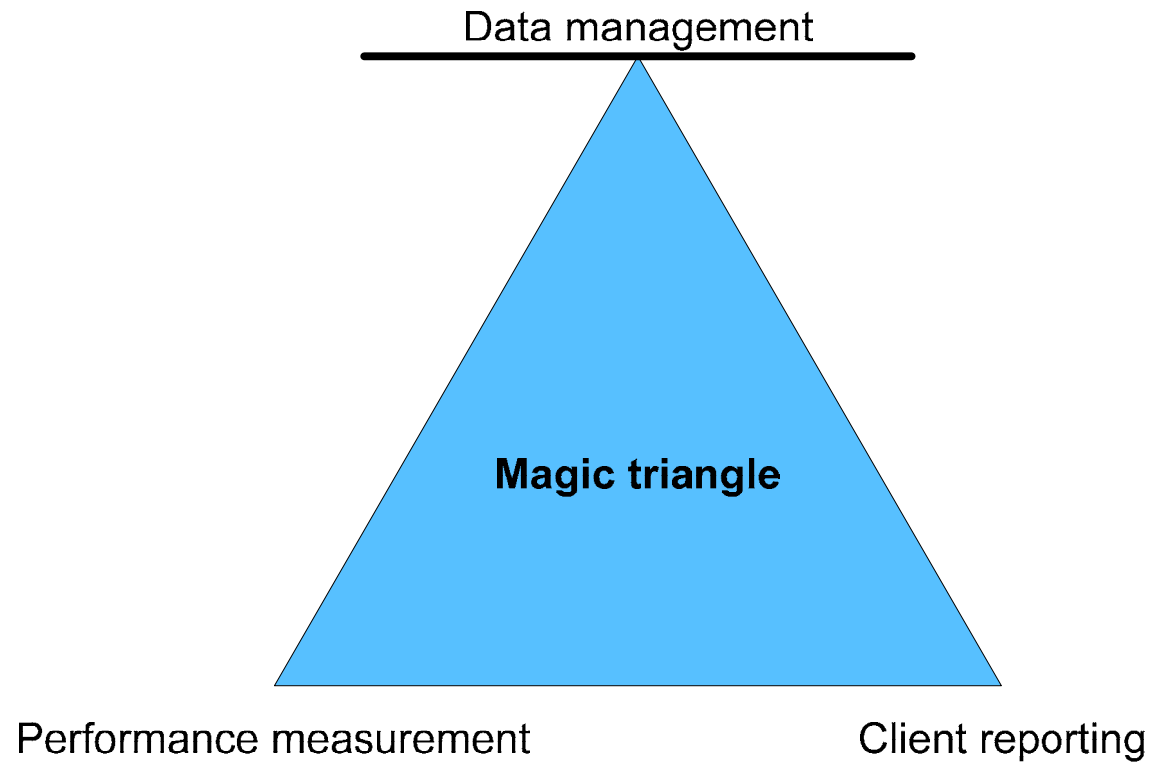
▪ all needed data is available

Client reporting



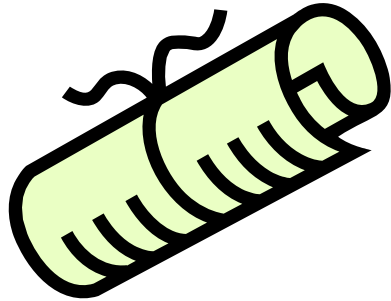
- comprehensive client reporting covering all aspects of performance analytics

Operational setup



- more integrated & centralized operational functions
- outsourcing is common practice

Certification and (self-)regulation



MiFID

G · I · P · S
Global Investment Performance Standards

CIPM
CERTIFICATE IN INVESTMENT
PERFORMANCE MEASUREMENT

Performance
examinations

Process reviews

- increased (self-)regulation
- broader acceptance of external / independent verifications or certifications

What is the biggest challenge in mastering the future ?

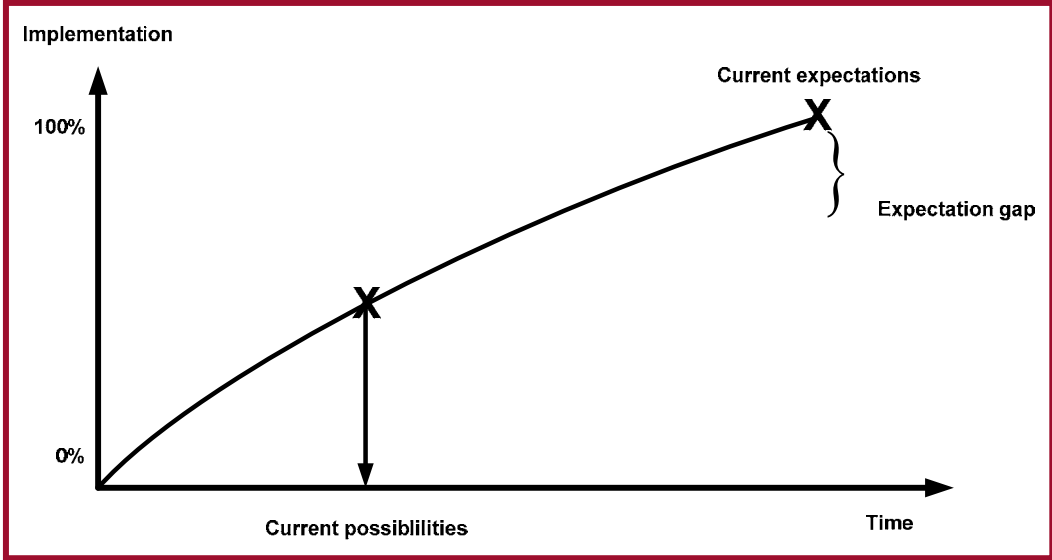
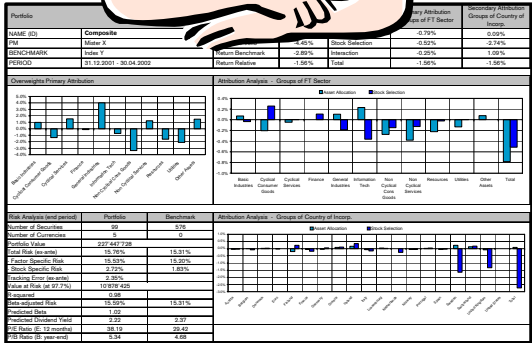
Managing the expectation gap



It is easy to implement

Low implementation and running costs

Any analysis is possible



Final remarks

Final remarks

- invest more time in identifying and defining the needs of the asset managers and of the clients
- accept that clients have specific needs with respect to performance analytics
- address not only the possibilities but also the limits of performance measurement and consequently create realistic expectations
- increase transparency and present necessary disclosures
- ensure that appropriate resources are available
- be aware of the cost-drivers and their impact on the total costs

=> put more emphasis on education as performance measurement and attribution is not as easy as it often appears !

Comments & Questions