

Future of Performance Measurement

Version 2.0

Date: April 2010

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Agenda

(1/3)

1. What happened over the last 10 years?
 - 1.1. Typical circumstances 10 years ago
 - 1.2. Developments in performance measurement / attribution
 - 1.3. Review of the last 10 years - what happened?
 - 1.4. Current status of performance measurement
2. What are the current trends?
 - 2.1. Hot topics on performance measurement
 - 2.2. Increasing asset manager needs
 - 2.3. Increasing client needs

Agenda

(2/3)

- 2.4. Increasing (self-)regulation
- 2.5. Increasing need for education and training
- 2.6. Increasing technical discussions / requirements
- 3. What will happen over the next 10 years?
 - 3.1. Performance measurement
 - 3.2. Performance attribution
 - 3.3. Risk attribution
 - 3.4. Risk models
 - 3.5. Data management
 - 3.6. Client reporting

Agenda

(3/3)

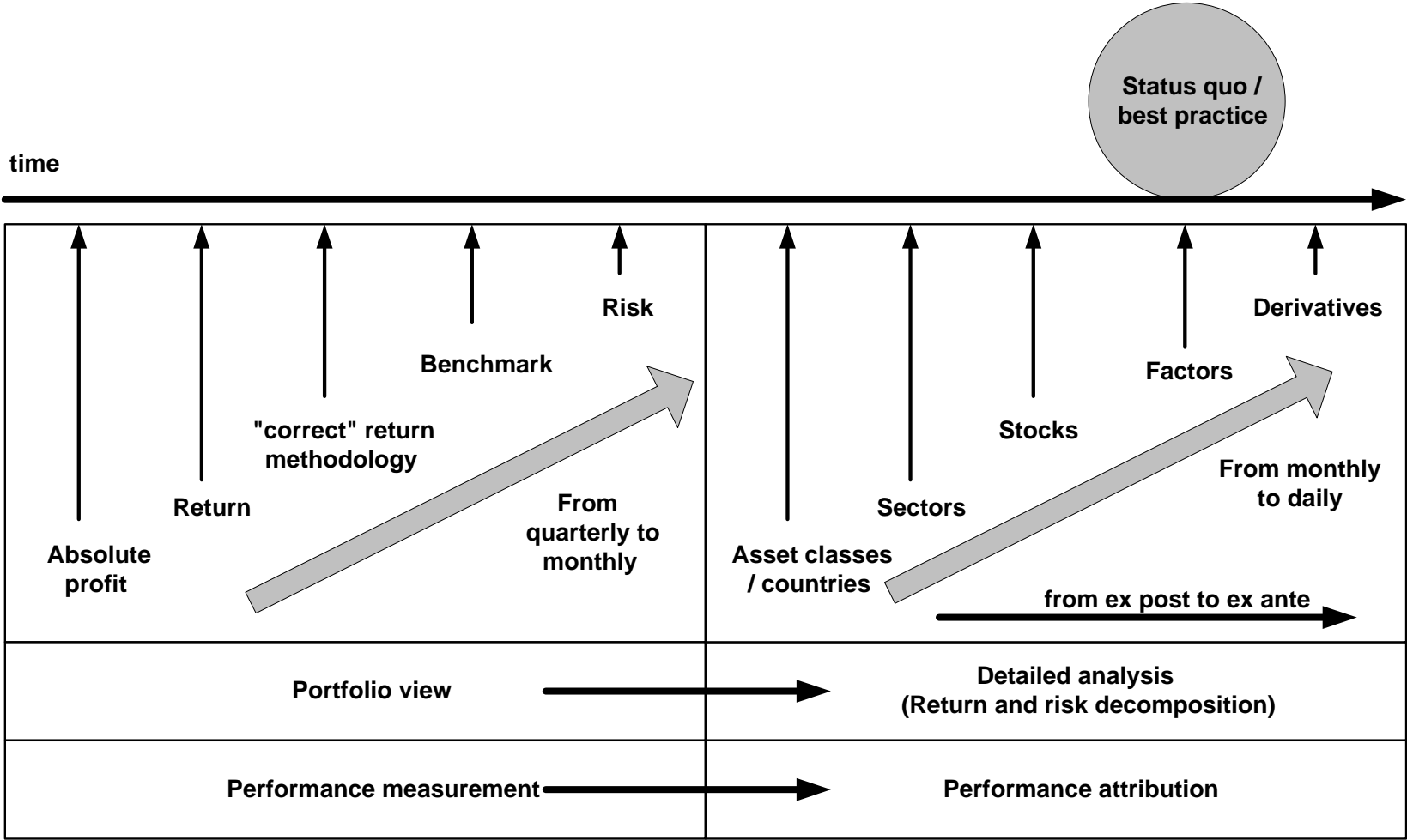
- 3.7. Certification and (self-)regulation
- 4. What is the biggest challenge in mastering the future?
 - 4.1. Managing the expectation gap
- 5. Final remarks
 - 5.1. Final remarks

1. What happened over the last 10 years?

Typical circumstances 10 years ago

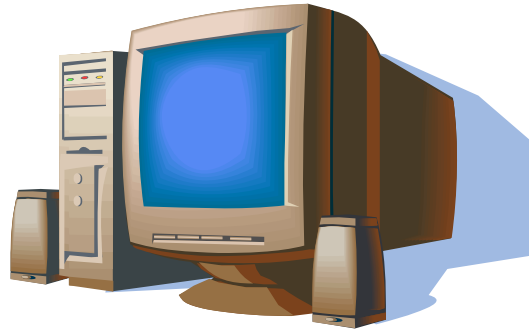
- Hardly any performance databases established.
- No performance reporting tool.
- Return attribution or risk attribution rarely provided.
- Monthly return calculation on portfolio level using the original Dietz method.
- Trade date accounting or accrual accounting for dividends rarely undertaken.
- 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

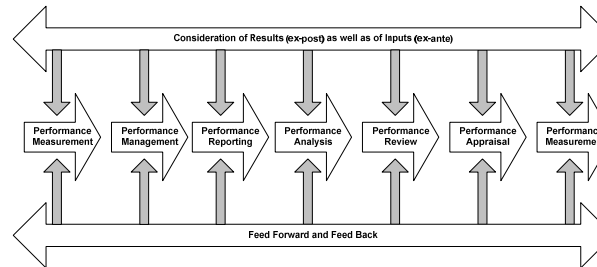


Review of the last 10 years - what happened ?

G · I · P · S
Global Investment Performance Standards



CIPM
CERTIFICATE IN INVESTMENT
PERFORMANCE MEASUREMENT

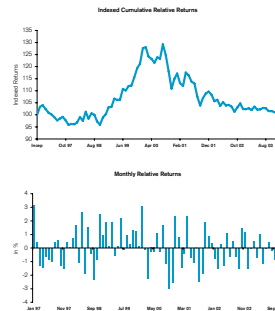


Equities World BM MSCI active Mandates direct

	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	9.28	-1.12
1 Year	17.68	19.64	-1.96
2 Years	-12.26	-10.46	-2.12
3 Years	-13.77	-11.82	-1.96
4 Years	-13.51	-11.82	-1.87
5 Years	-2.31	-2.40	0.13
Since Inception	4.63	5.25	-0.32

	Calendar Year Returns in %		
	Composite	Benchmark	Relative
YTD	17.68	19.64	-1.96
2000	17.68	19.64	-1.96
2001	-35.50	-32.50	-3.23
2002	-15.64	-14.47	-1.52
2003	-13.46	-11.84	-1.52
1999	60.21	46.07	14.44
1998	21.59	17.51	3.78
1997	22.63	26.25	-3.75

	Composite	Benchmark
Volatility over 1 Year	16.50	15.80
Volatility Since Inception	22.98	20.52
Sharpe Ratio over 1 Year	1.05	1.24
Sharpe Ratio Since Inception	0.70	0.72
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	-0.09	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%	-0.17%
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%	0.36%
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)	18.66%	1.50%
- Factor Specific Risk	18.66%	1.50%
- Region	11.50%	0.18%
- Country	6.98%	0.83%
- Industry	2.64%	0.77%
- Fundamental	1.44%	0.78%
- Currency	8.42%	0.27%
- Covariance (+/-)	9.95%	0.52%
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.
 - ...
-

2. 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 requirements by the regulators**

- => for example in Europe 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.)

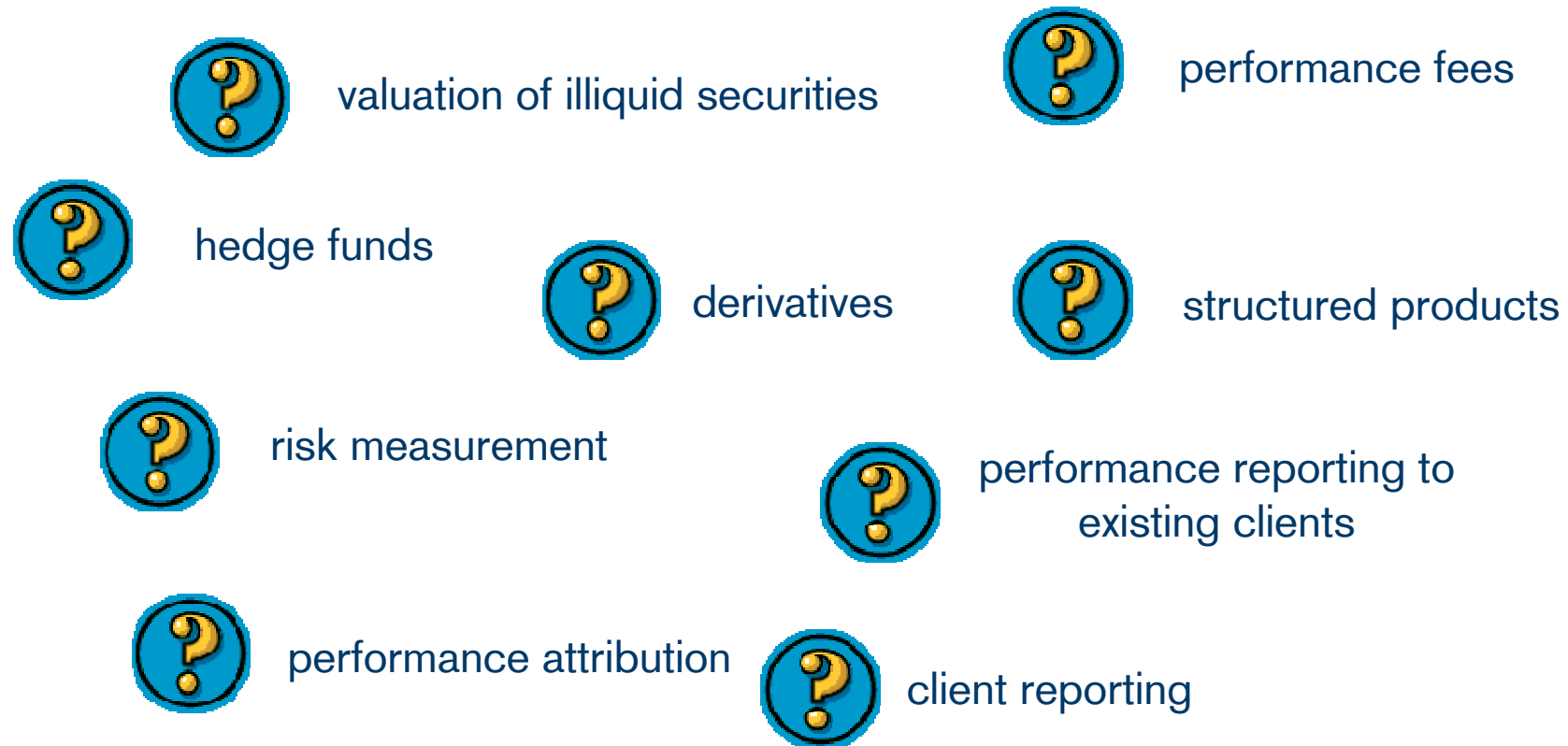
- => other performance presentation related standards (mutual funds, private equity, real estate, etc.)

- => ...

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 address the client specific analytics as well
 - => ...

Increasing technical discussions / requirements (1/2)

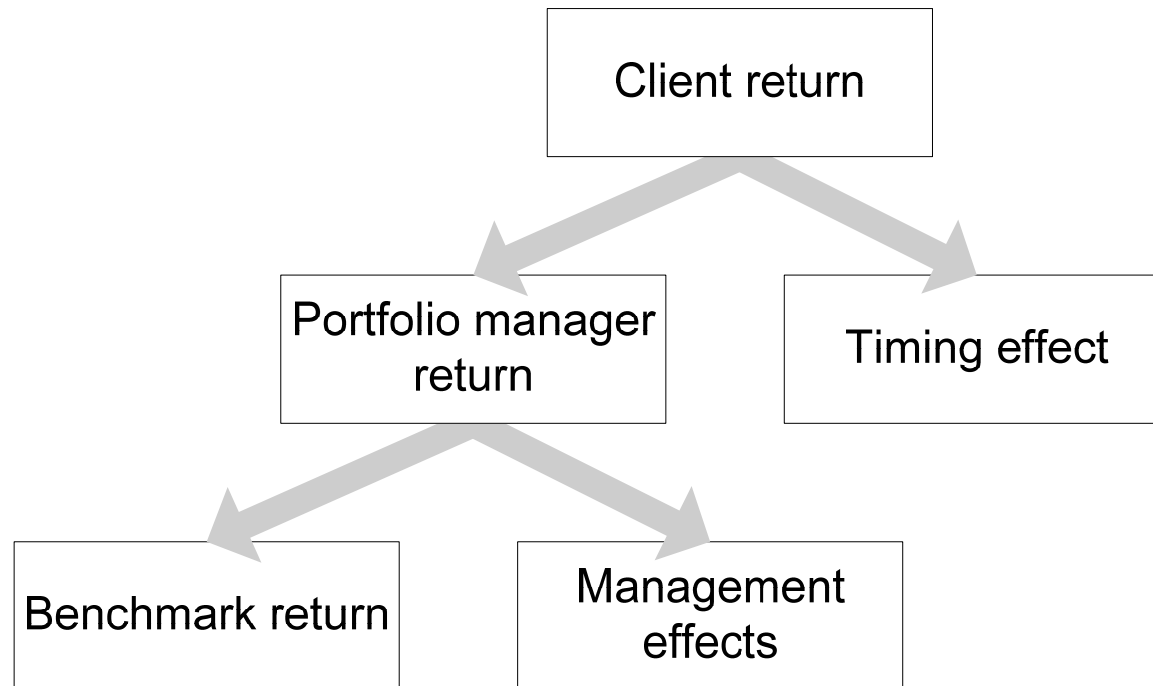
- increasing debates on the shortcomings and the appropriateness of certain calculation methodologies
 - => development of a comprehensive return and risk calculation framework
 - => economical interpretation of calculation techniques
 - => ...
 - increasing needs for developing risk models
 - => to 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
 - => ...
-

3. What will happen over the next 10 years?

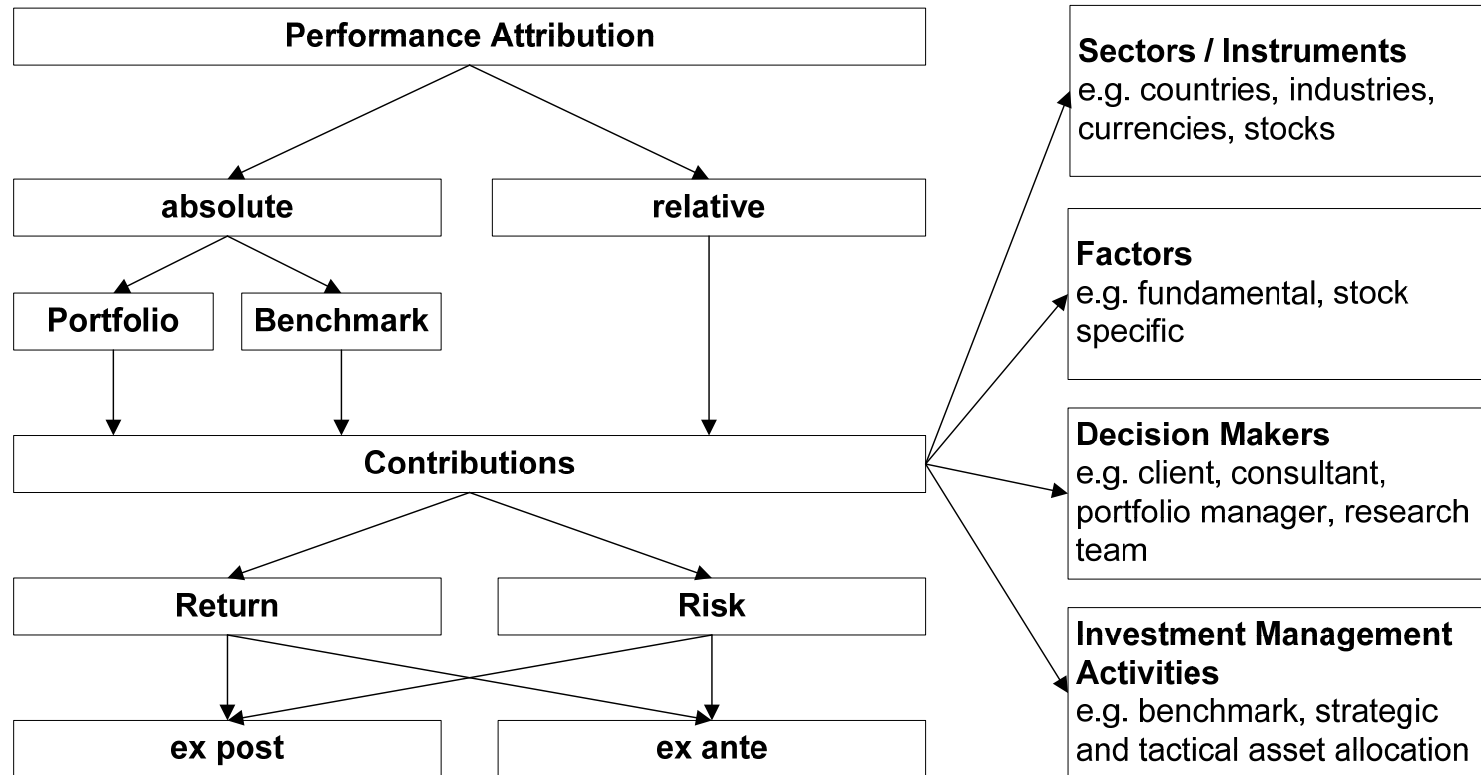
Performance measurement



- Comprehensive performance measurement framework established

Performance attribution

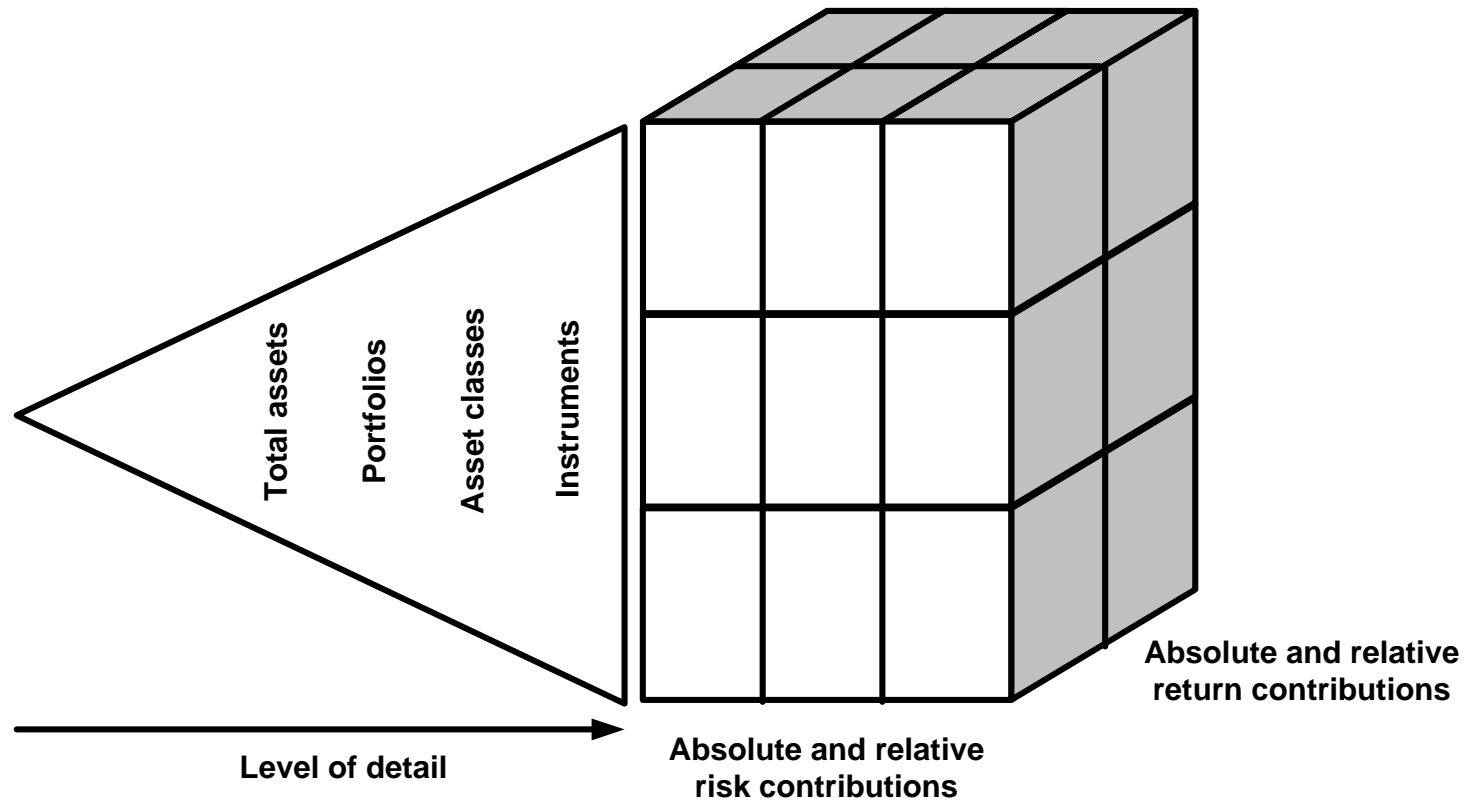
(1/4)



■ All kind of performance analytics available

Performance attribution

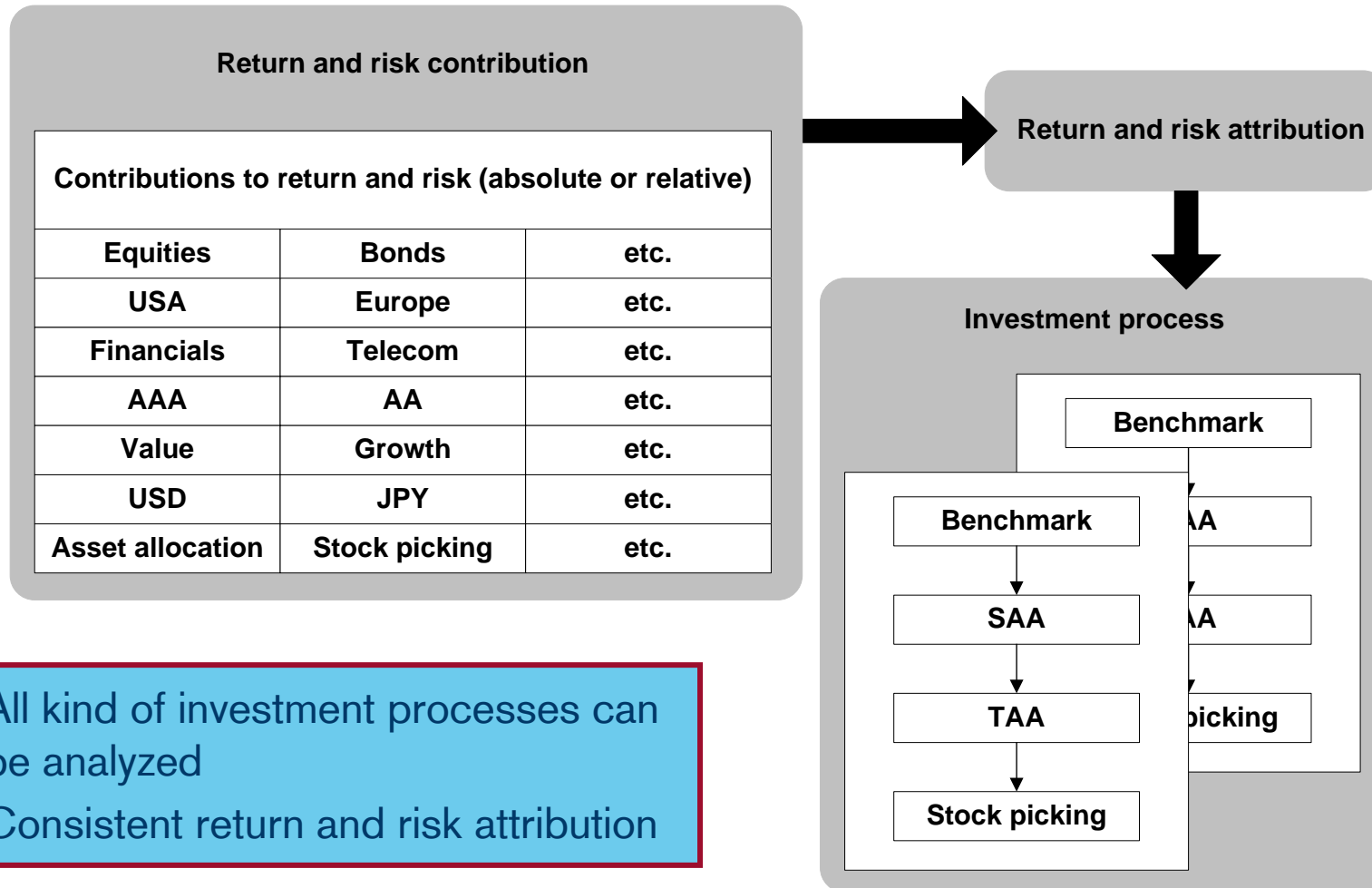
(2/4)



- "Slice & dice" performance analytics available

Performance attribution

(3/4)



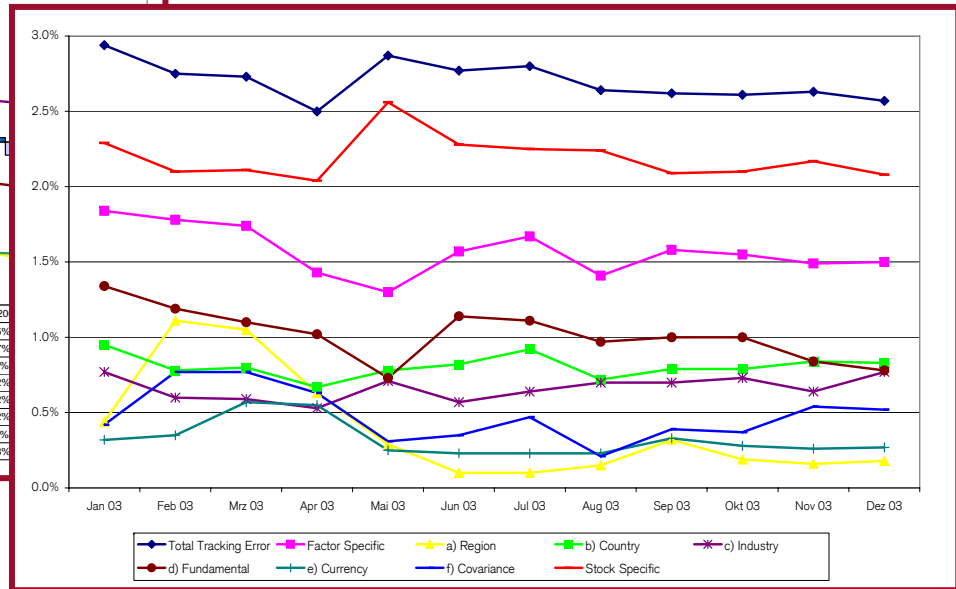
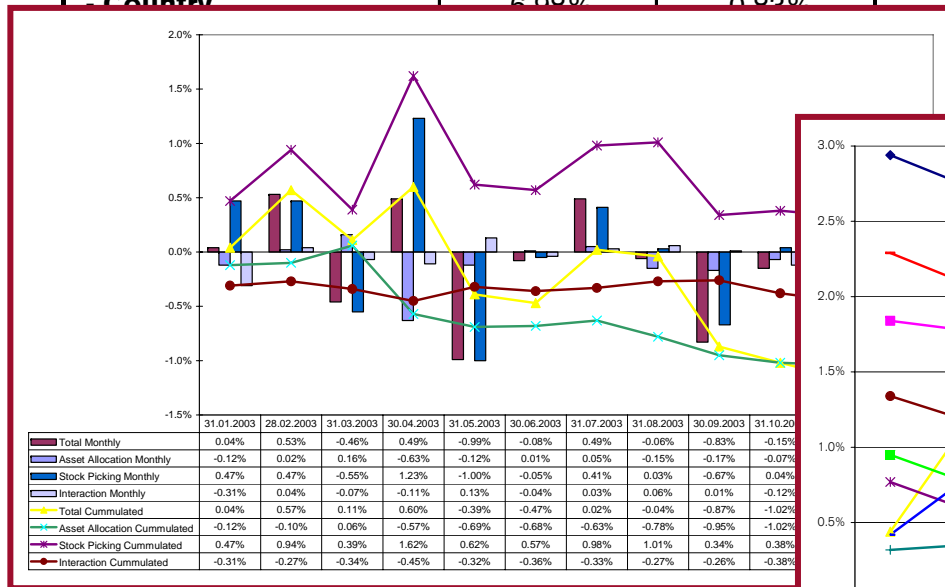
- All kind of investment processes can be analyzed
- Consistent return and risk attribution

Performance attribution

(4/4)

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



Risk attribution

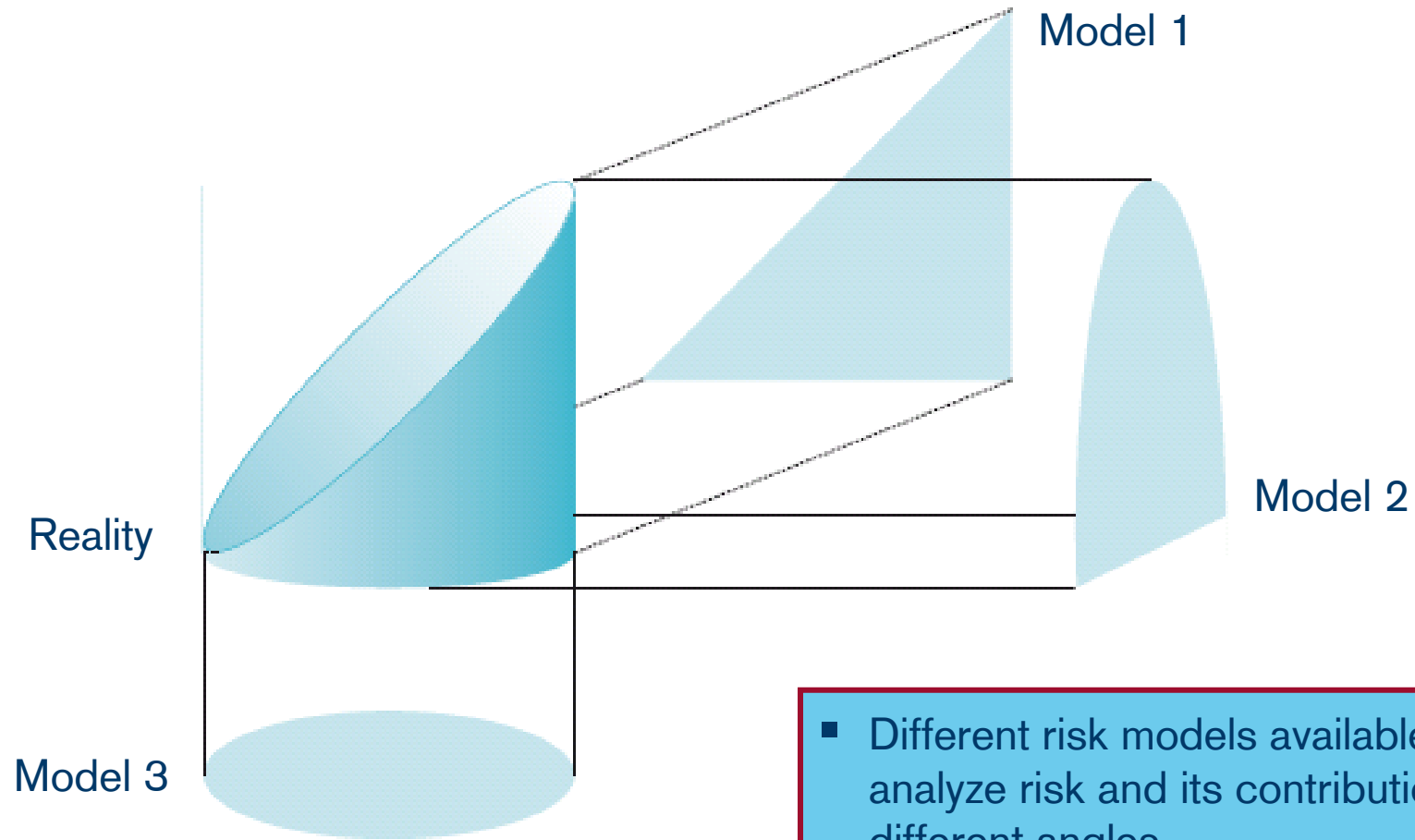
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- All securities can be mapped
- Impact of liabilities and leverage can be analyzed
- All risk factors are relevant for the decision makers
- All risk factors are empirically significant
- Risk models have a high degree of accuracy and very small estimation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

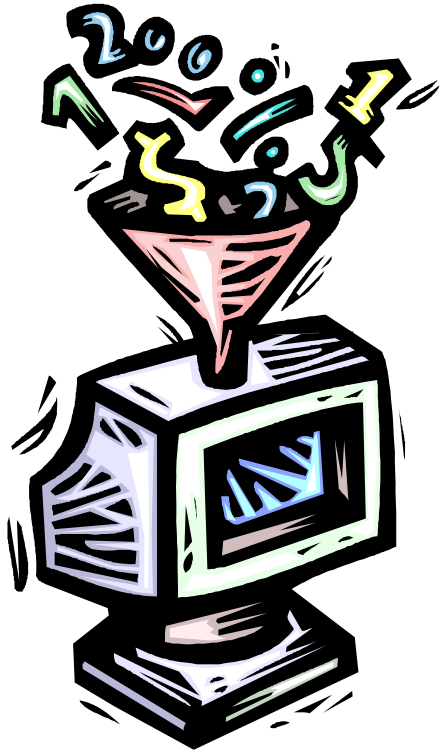
■ Risk attribution reflects full investment universe and the whole investment process

Risk models



- Different risk models available to analyze risk and its contributions from different angles

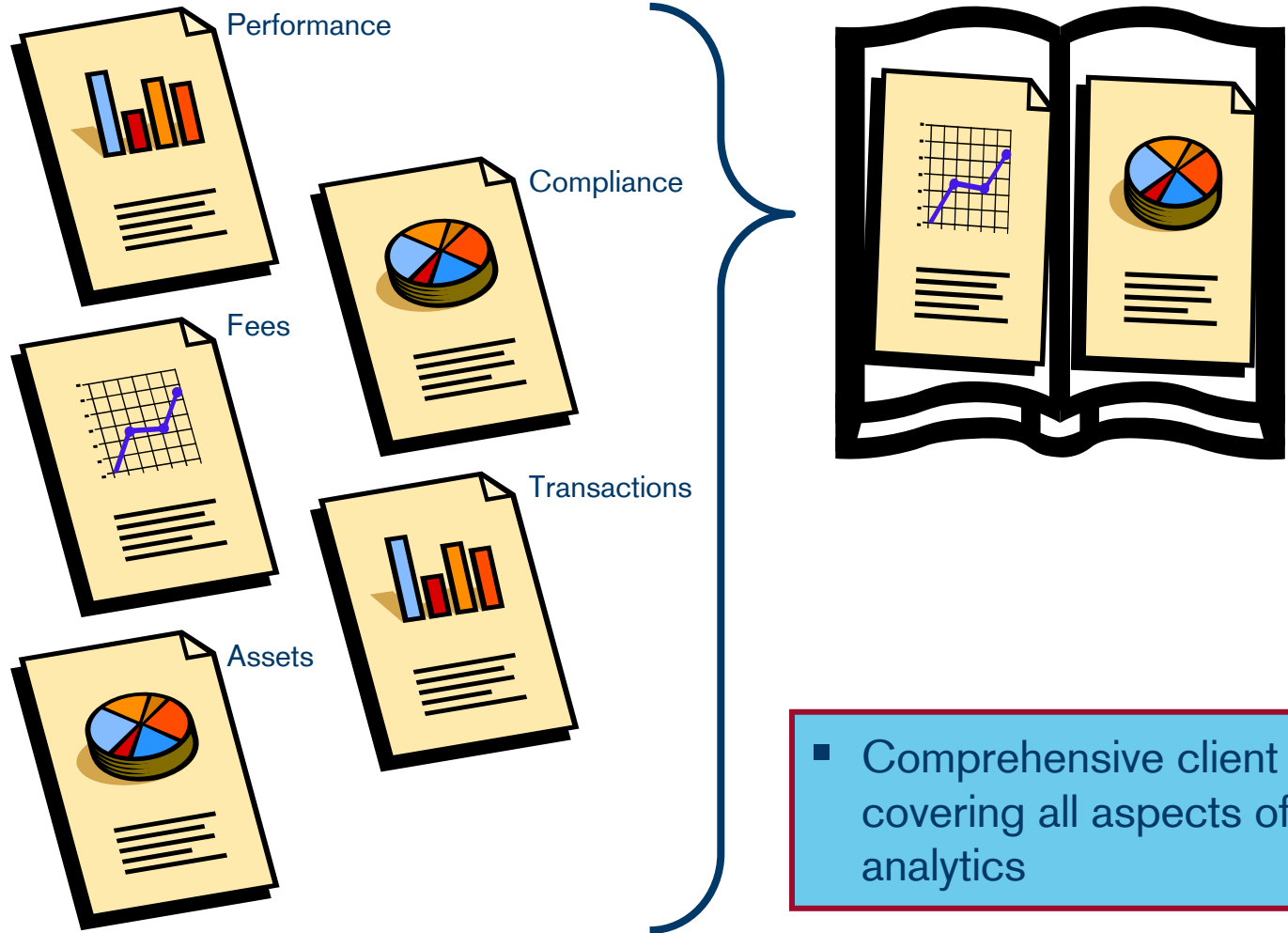
Data management



- 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
- ...

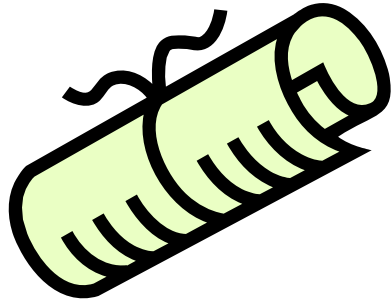
- All needed data is available

Client reporting



■ Comprehensive client reporting covering all aspects of performance analytics

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

4. What is the biggest challenge in mastering the future?

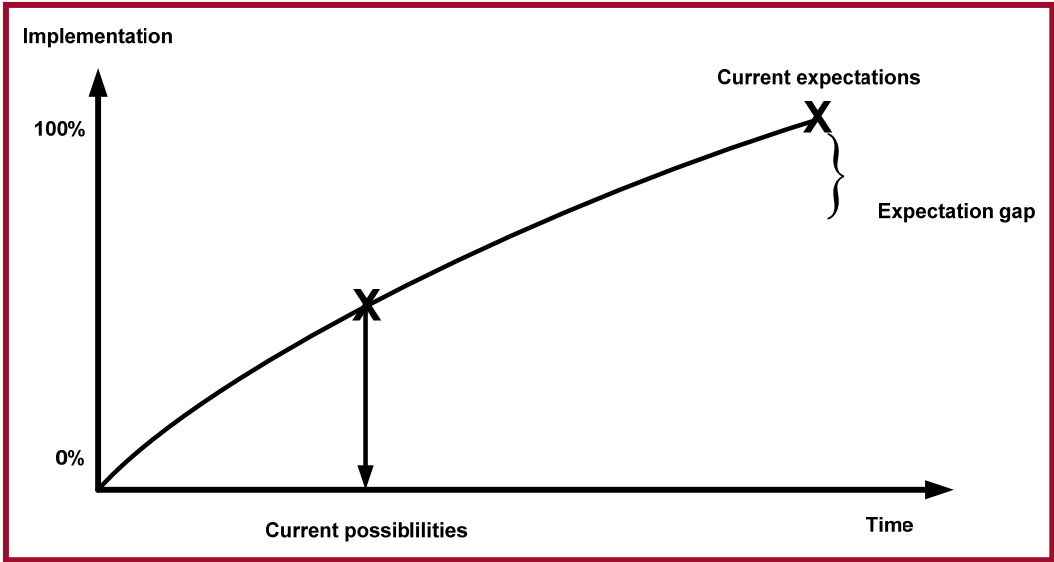
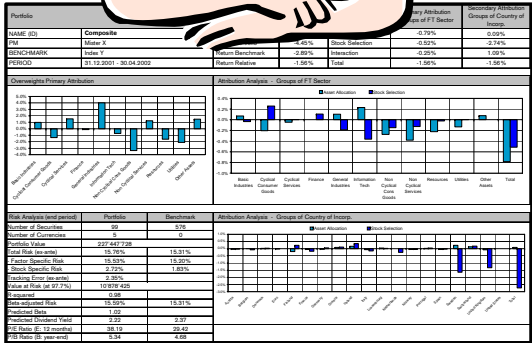
Managing the expectation gap



It is easy to implement

Low implementation and running costs

Any analysis is possible



5. 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!