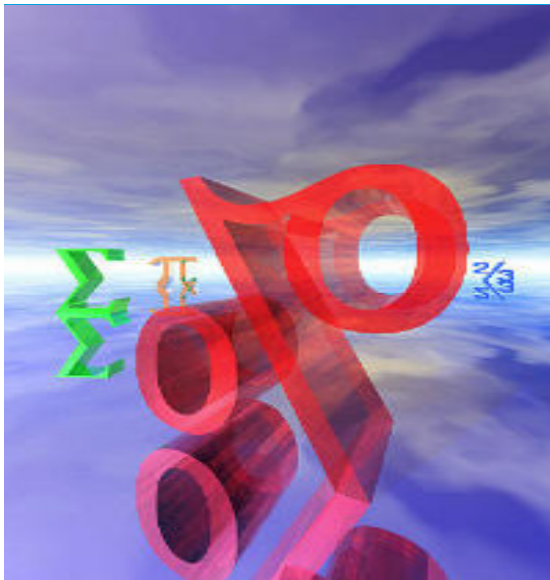


MERCER

Consulting. Outsourcing. Investments.



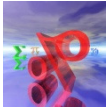
MARSH MERCER KROLL
GUY CARPENTER OLIVER WYMAN



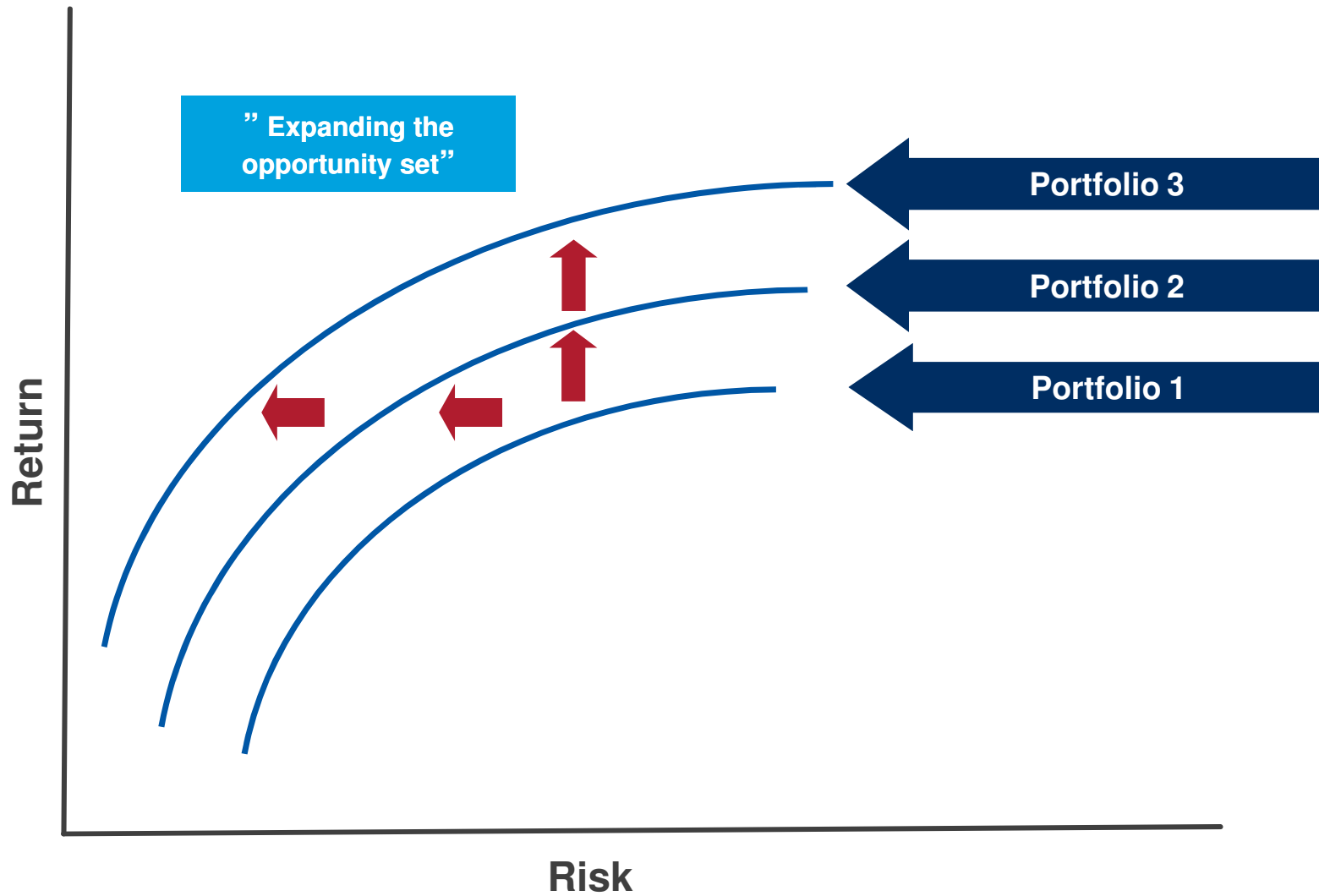
The role of alternatives in strategic asset allocation

Jelle Beenen,

**CFA Alternative Investment Event
11 June 2009**



The role of alternatives in strategic asset allocation

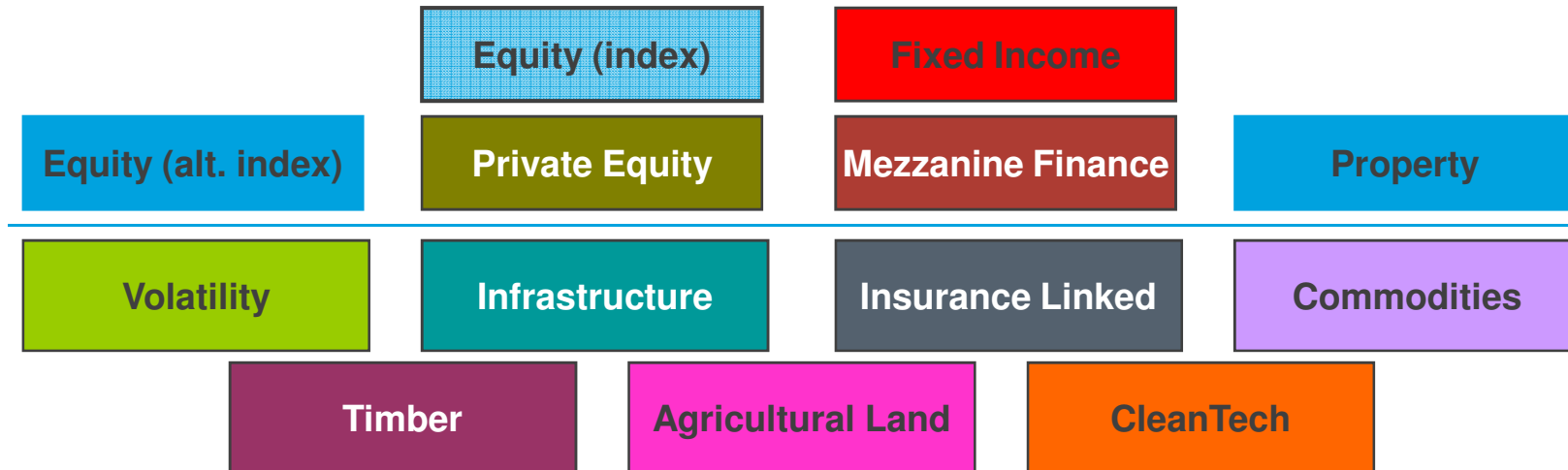




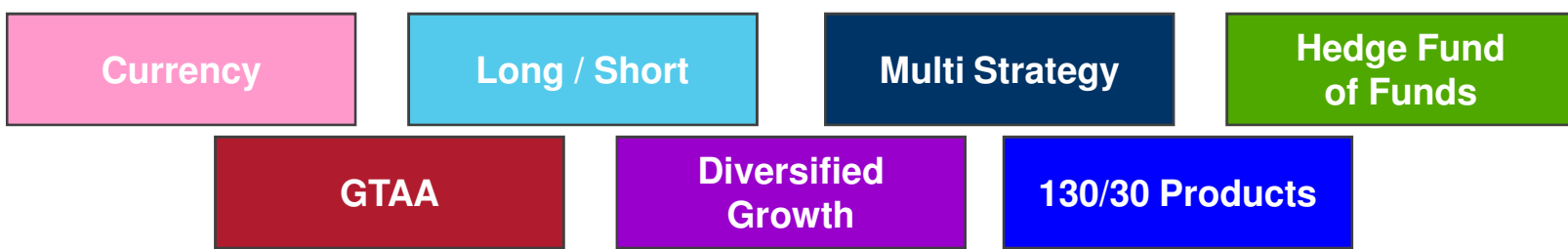
Return Seeking Investments

What are the components to build the return-portfolio?

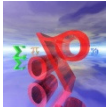
Beta = returns from providing risk capital or productive resources



Alpha = Returns from skilful management of assets



The number of building blocks increases, but so does complexity, the importance of implementation, the need for an innovative attitude and the necessity of appropriate governance

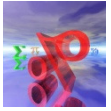


What underlies the most important strategic decision?

Asset Class	Return	Risk	Correlation																				
Index-Linked Gilts (20-year duration)	4.46%	8.69%	1.00																				
Fixed Interest Gilts (20-year duration)	4.46%	7.87%	0.66	1.00																			
AA Index-Linked Bonds (20-year duration)	5.78%	11.89%	0.73	0.40	1.00																		
AA Fixed Interest Bonds (20-year duration)	5.78%	11.30%	0.62	0.91	0.65	1.00																	
Absolute Return Active Strategy	4.46%	1.58%	0.09	0.03	0.02	0.03	1.00																
ILGs (>5s)	4.46%	6.32%	0.96	0.70	0.67	0.64	0.14	1.00															
FIGs (all)	4.46%	4.26%	0.72	0.88	0.42	0.78	0.24	0.78	1.00														
FIGs (>15)	4.46%	6.05%	0.73	0.96	0.43	0.87	0.13	0.77	0.97	1.00													
UK £ Credit(all)	5.78%	4.61%	0.60	0.75	0.54	0.80	0.28	0.62	0.83	0.81	1.00												
UK £ Credit(>10)	5.78%	6.80%	0.68	0.91	0.61	0.95	0.14	0.72	0.90	0.93	0.88	1.00											
Conventional Property	6.46%	14.87%	0.06	0.20	0.13	0.25	-0.20	0.04	-0.04	0.09	-0.00	0.10	1.00										
HLV Property	5.46%	9.15%	0.18	0.31	0.17	0.33	-0.14	0.16	0.11	0.23	0.11	0.21	0.98	1.00									
Hedge Funds	4.46%	1.58%	0.09	0.03	0.02	0.03	1.00	0.14	0.24	0.13	0.28	0.14	-0.20	-0.14	1.00								
Commodities	4.46%	22.13%	-0.16	-0.29	-0.21	-0.32	0.10	-0.17	-0.21	-0.27	-0.15	-0.29	-0.17	-0.21	0.10	1.00							
Infrastructure (Debt)	5.14%	7.33%	0.87	0.53	0.91	0.66	0.08	0.87	0.63	0.61	0.62	0.69	0.05	0.13	0.08	-0.17	1.00						
Infrastructure (Listed Equity)	8.14%	18.31%	0.31	0.25	0.51	0.45	0.05	0.30	0.18	0.21	0.26	0.35	0.18	0.12	0.05	-0.01	0.45	1.00					
Infrastructure (Unlisted Equity)	10.52%	30.17%	0.20	0.11	0.45	0.32	0.01	0.18	0.02	0.06	0.13	0.21	0.19	0.10	0.01	0.02	0.35	0.99	1.00				
Private Equity	11.39%	34.47%	0.17	0.08	0.43	0.30	0.00	0.15	-0.02	0.03	0.11	0.18	0.19	0.10	0.00	0.03	0.34	0.98	1.00	1.00			
Equities	8.79%	16.57%	0.28	0.21	0.49	0.42	0.05	0.27	0.14	0.18	0.24	0.32	0.18	0.12	0.05	-0.00	0.43	1.00	0.99	0.99	1.00		
Equities (Currency Hedged)	8.73%	15.94%	0.29	0.25	0.50	0.45	0.06	0.28	0.15	0.20	0.24	0.35	0.22	0.15	0.06	-0.07	0.43	0.98	0.97	0.97	0.98	1.00	

If this is the main determinant of your strategic asset mix, what does that tell about you?

Are you aware of the power, the consequences and the limitations?

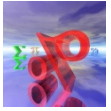


Construction of Return Portfolio, Diversification and (ALM) modelling

- Dependency on quantitative data excludes many attractive investments, before even starting the process
- High risk premiums to be found in new markets without much track record
- Traditional (quantitative) ALM neglects market structures, the flow of money and the strength and weaknesses of the pension funds herein.
- Quantitative focus neglects the basic questions
- Responsible judgments without data are possible!
- Hard to incorporate non-normality in a correlation matrix
- Too many variables makes quantitative optimisation unstable



Asset allocation, including alternatives



(Risk) Allocation.

Input for each allocation decision:

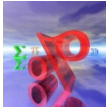
- Expected Return
- Expected Risk/Volatility
- Expected Correlation Structure

But also:

- **Confidence in/ sustainability of the expectation**
- **Understanding of / transparency in asset classes and strategies**
- **Costs**
- **Labour intensity**

For allocations to active investment one should add:

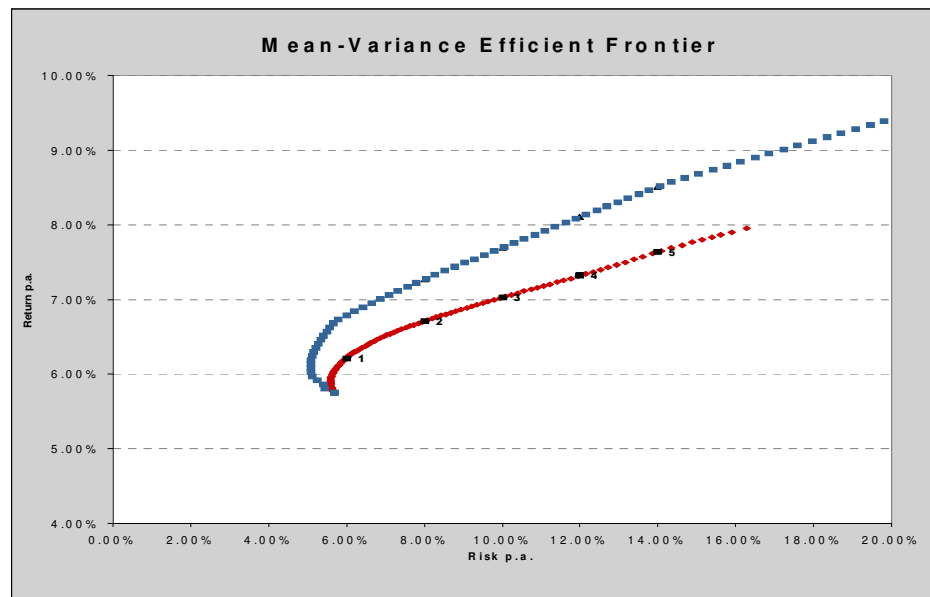
- Where and by whom?



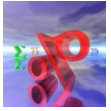
Asset Allocation

Many ways ...

- quantitative approach
 - Mean Variance, traditional Markowitz Efficient Frontier analysis



- Stochastic Modelling, taking into account the uncertainty in data-series and assumptions

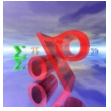


Asset Allocation

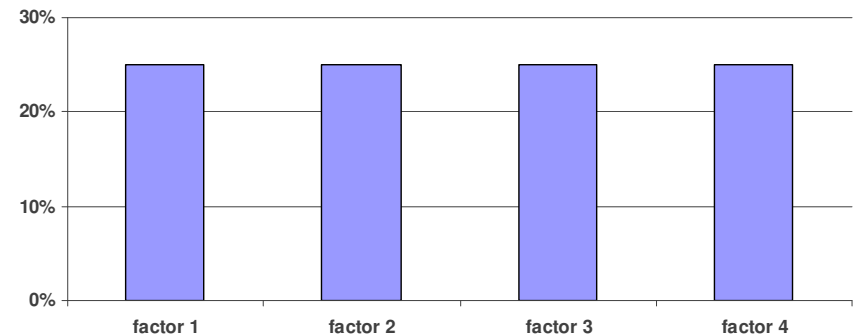
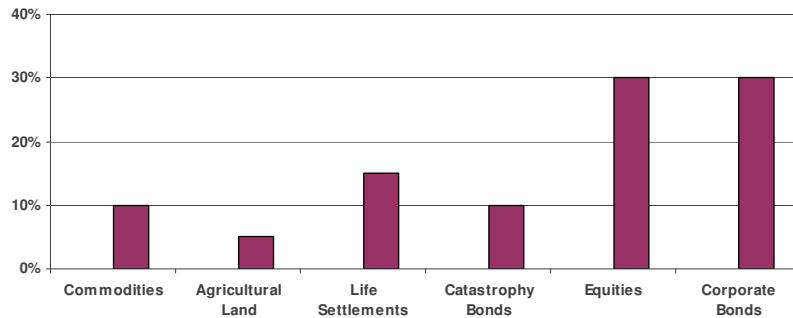
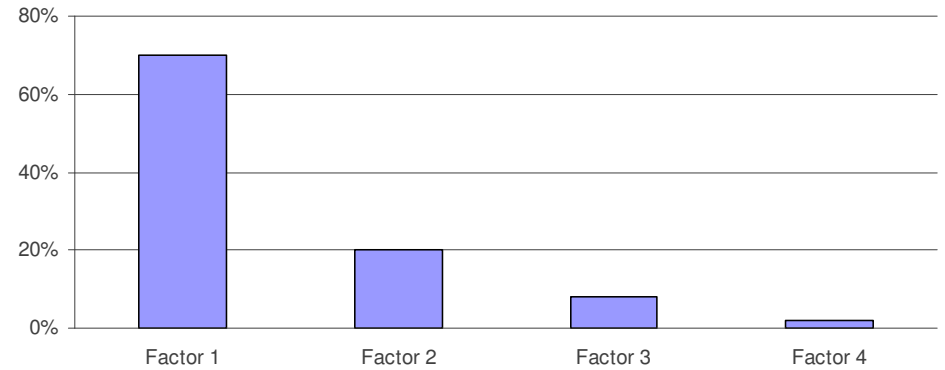
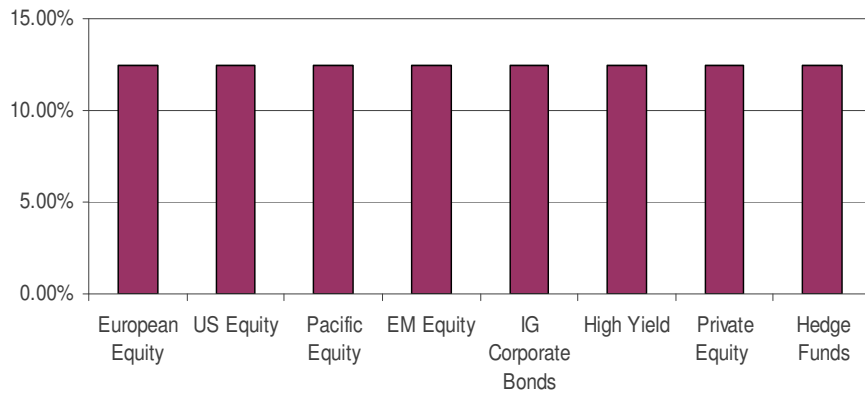
Many ways ...

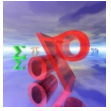
- Qualitative approach
 - Intensive qualitative analysis of sources of return: why can you expect a positive return, who pays and why?

- Scenario analysis
 - Define relevant scenarios (e.g. high inflation, scenarios which will be hard for the sponsor, 'good' scenarios for the sponsor)
 - Per scenario, reason which asset class/investment strategy will do well and which ones won't
 - For each scenario, design the best investment mix
 - Put weights to each scenario, based on probability and utility



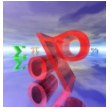
Asset class diversification is not diversification over factors





Factor analysis.

Risk factor	ERP	Illiquidity	Skill	Inflation	Non-Corporate GDP Growth	Volatility	Credit	Cash	Term Structure
Investment opportunity									
Credit (Active) - investment grade	10	10	20				40		20
Credit (Active) - high yield - distressed debt	20	20	30				30		
GTAA	20		50				10	20	
Infrastructure - new - developed		40 30	10 10	20	30 30		20 10		
Commodities				30	70				
Timber / Agriculture		30		30	40				
Pure Skill-based Strategies	10		50	10			10	20	

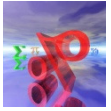


Scenario Analysis

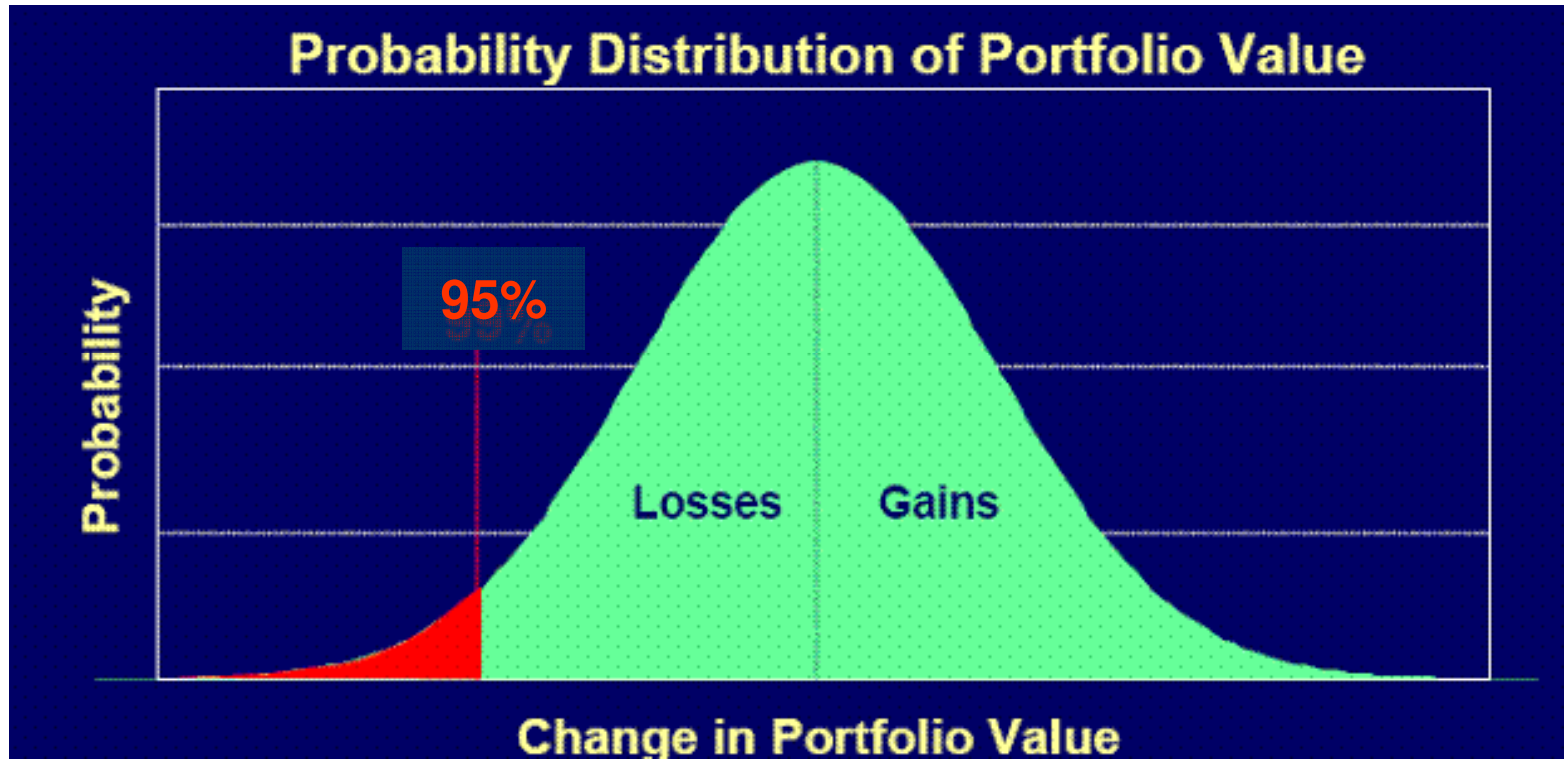
Growth

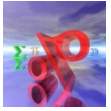
Inflation

Equities Credit Commodities Real Assets	IL Bonds Insurance Commodities Real Assets	Rising
Credit Bonds Insurance	Equities Credit Bonds	Falling

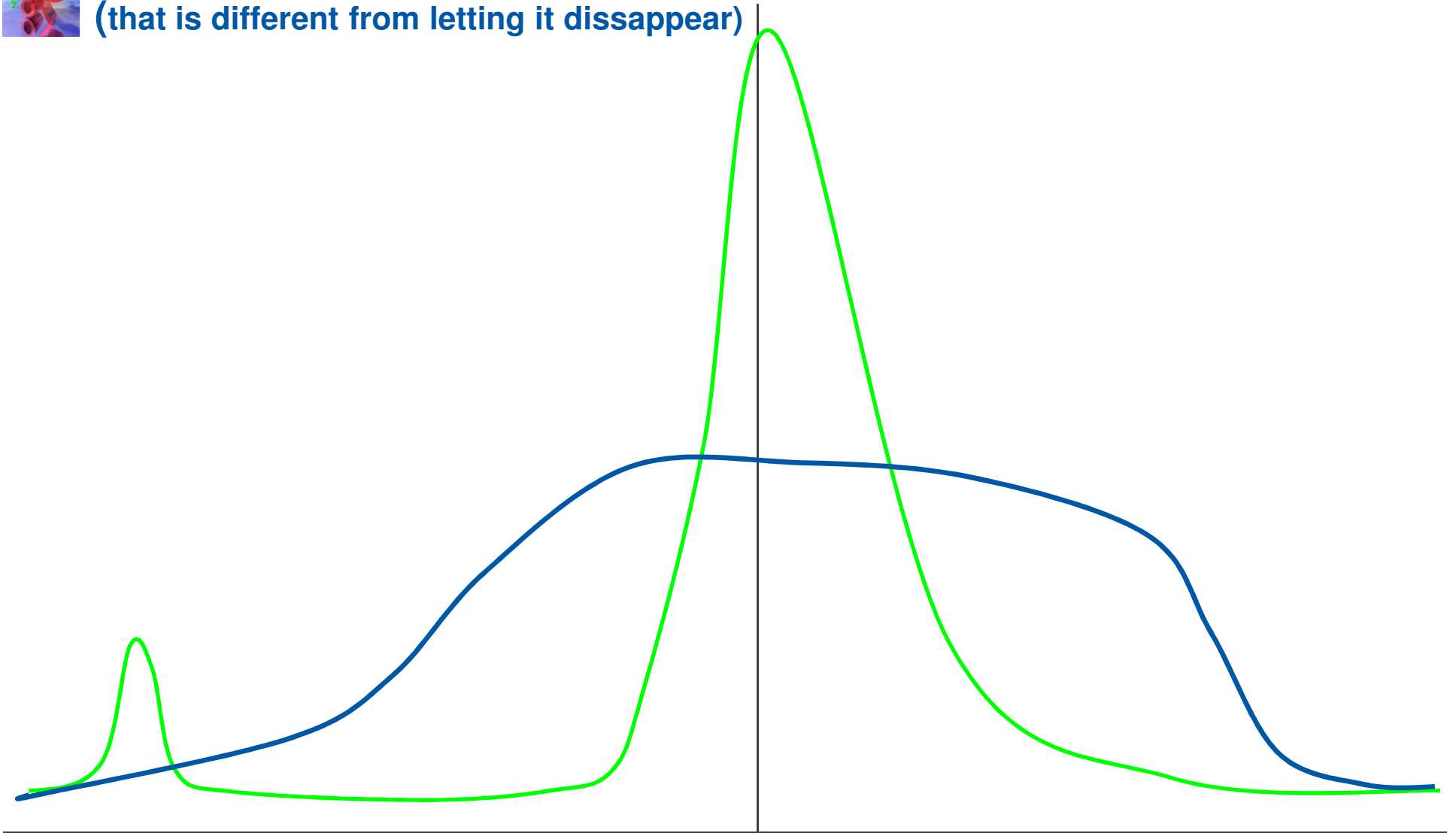


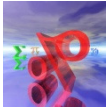
Value at Risk, confidence interval. But where is the risk?



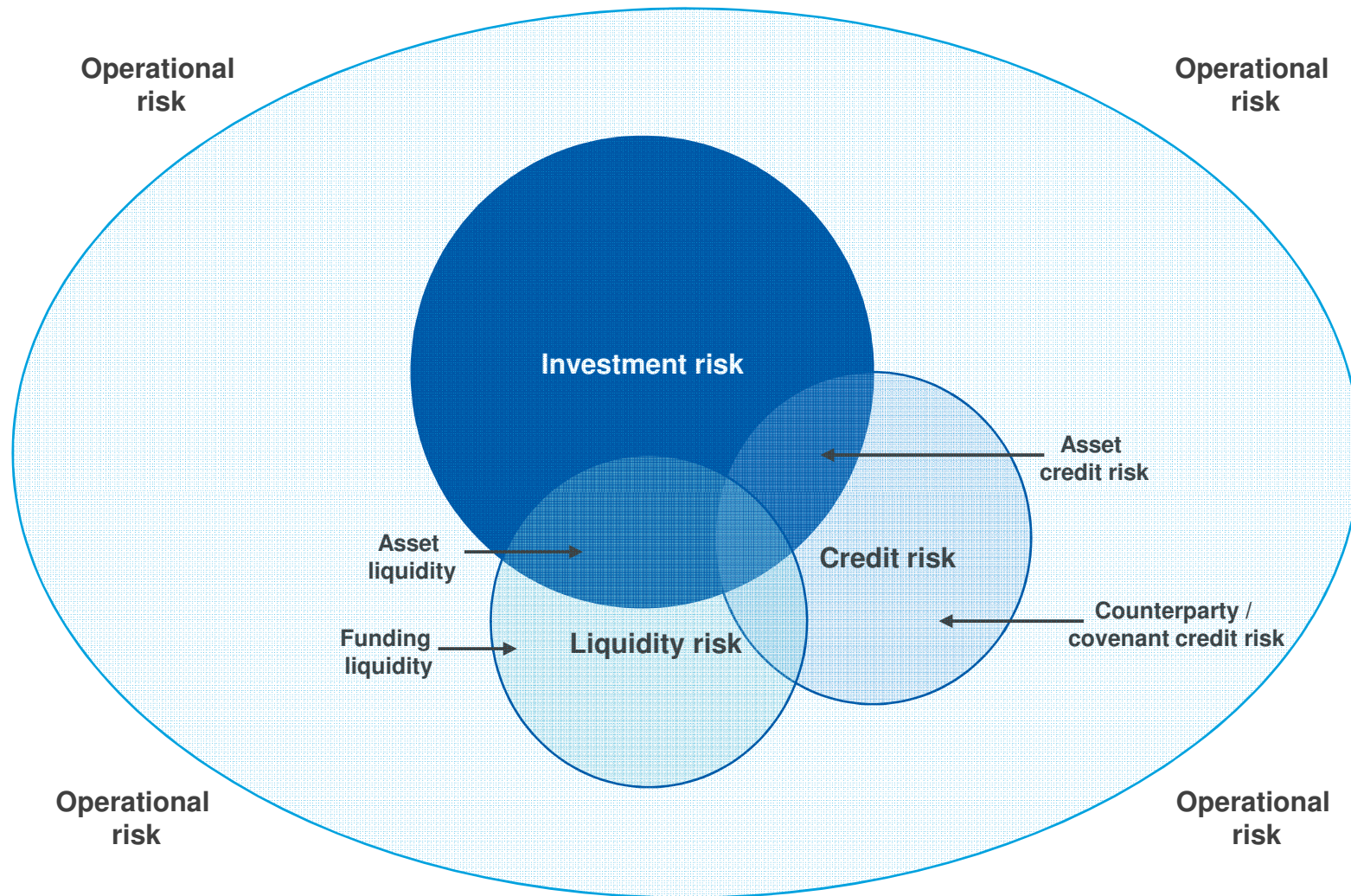


Financial innovation can move risks. (that is different from letting it disappear)





It is not just market risk that can hurt you



Alternative investments require closer management of investment, liquidity, credit and legal / regulatory risks

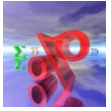


Asset Allocation

Many ways ...

- Stress Scenarios, also for analysis of correlations

	investment 1	investment 2	investment 3	investment 4	investment 5	investment 6	investment 7	investment 8
-Isolated IR rise of 1%	--	--	0	-	+	--	--	--
-Electricity Crisis	-	-	-	--	++	+	--	+
-Banks stop proprietary trading	-	0	--	-	--	++	-	--
-10% spike in equity vol	-	--	+	+	0	--	++	+
-expanding credit spreads 1%	--	+	--	0	++	++	--	0
-Liquidity Crisis	--	-	--	-	--	-	++	-
-Global Recession	+	--	+	--	0	--	-	--
-Isolated equity decline	0	--	++	--	-	--	--	++
-Hurricane Miami	++	+	--	--	0	++	--	--
-earthquake San Fransisco	--	--	+	+	--	--	++	-
-Avian Flu Pandemic	+	0	--	-	-	+	--	++
-20% Commodity price rise	0	--	++	+	0	--	--	--
-Consumer Credit Crisis	++	0	--	++	--	+	-	--
-Foreign withdrawal from US debt	--	-	-	0	++	0	+	++
-BRIC hard landing	0	--	+	--	+	--	-	-
-Gulf War	++	--	++	--	--	--	--	--
- 9-11-2001	++	+	--	-	-	--	+	0
-LTCM	0	--	0	+	-	0	++	--
-quick and strong economic recovery	++	+	0	--	++	0	+	-
-EM expansion	++	--	+	++	--	++	-	++
-Food price spike	--	-	-	-	+	0	+	--
-Climate Change	-	-	0	--	+	-	--	++
-Protectionism	0	--	--	--	--	-	-	--



Asset Allocation

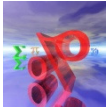
total approach

- Combine the different methodologies

- Add constraints and accents:
 - Liquidity
 - Availability/Capacity
 - Labour intensity/Governance
 - Own identity → e.g. exclusions on ethical or social grounds
 - Themes/Vision → e.g. China, Climate Change
 - Use of leverage
 - Use of Derivatives

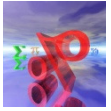
- Continuous process: feedback loop by monitoring
 - Check whether or not the original assumptions are still reasonable

Alternatives



Create clarity of purpose

- Divide the return portfolio into clear sub portfolios with a clear focus: for instance market exposure (beta), themes, outperformance (alpha), inflation, long term risk premia (alternative beta)
- Further improvement of the portfolio, both by diversification or by suitability, by adding alternatives :
 - Hedge funds
 - Private Equity
 - Life Settlements
 - Volatility
 - Emerging Market Debt
 - CO2 Emission rights
 - Intellectual Property
 - Agricultural Land
 - Infrastructure
 - Timber
 - Catastrophe Bonds
 - Distressed Debt
 - ?



Which alternative investments for what purpose?

Diversifying

Inflation

New markets

Long Term

Alpha

Commodities

Commodities

Catastrophe Bonds

Private Equity

Global Tactical Asset Allocation

Catastrophe Bonds

Timber

CO2 emission rights

Infrastructure

Currency

Volatility

Infrastructure

Life Settlements

Timber, Agricultural Land

Hedge fund strategies

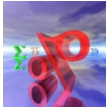
Intellectual Property

Agricultural Land

Agricultural Land

Catastrophe Bonds

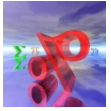
Distressed Debt



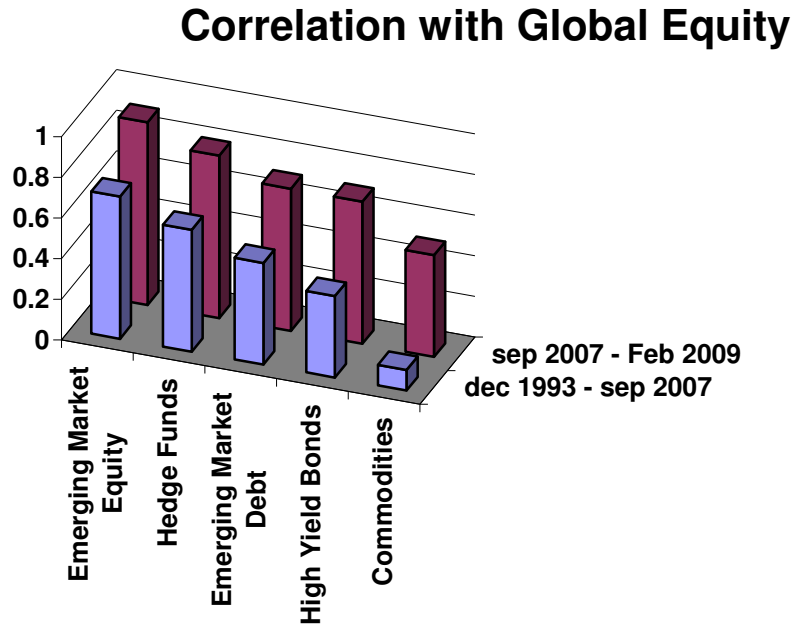
Monitoring

- If a component of your strategic investment policies is focussing on:
 - Diversification monitor
Realised correlation
 - Long term risk premiums monitor
Likelihood of realisation, demand for long term capital, liquidity
 - Responsible investment monitor
Effect on ESG, Realisation of ESG-premium
 - Return for taking risk monitor
Validity of risk premium, effectiveness hedging of unrewarded risks
 - Investment skill monitor
Return form market vs return from skill

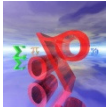
Don't fool yourself!



Did alternatives deliver the promise of diversification when it really mattered?



- Asset classes were linked by liquidity/de-leveraging
- Diversified return portfolio still better than 100% equities
- Important to look for non-financial return drivers (commodities, insurance,..)
- Stress analysis should also look at correlations.

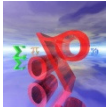


Return Portfolio Alternatives

- Advantages:
 - Investment Characteristics
 - ‘Fitting’ Investments

- Issues:
 - Valuation/Transparency
 - Difficulties for quantitative analysis
 - ‘Fat Tails’
 - Sourcing, can require nimbleness in decision making
 - Operational Risks
 - Labour Intensive
 - Implementation becomes of utmost importance (dispersion of returns)

Implication: the advantages have to be weighted against the effort to mitigate the issues

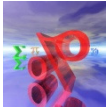


Return Portfolio

Alternatives, mitigating the issues.

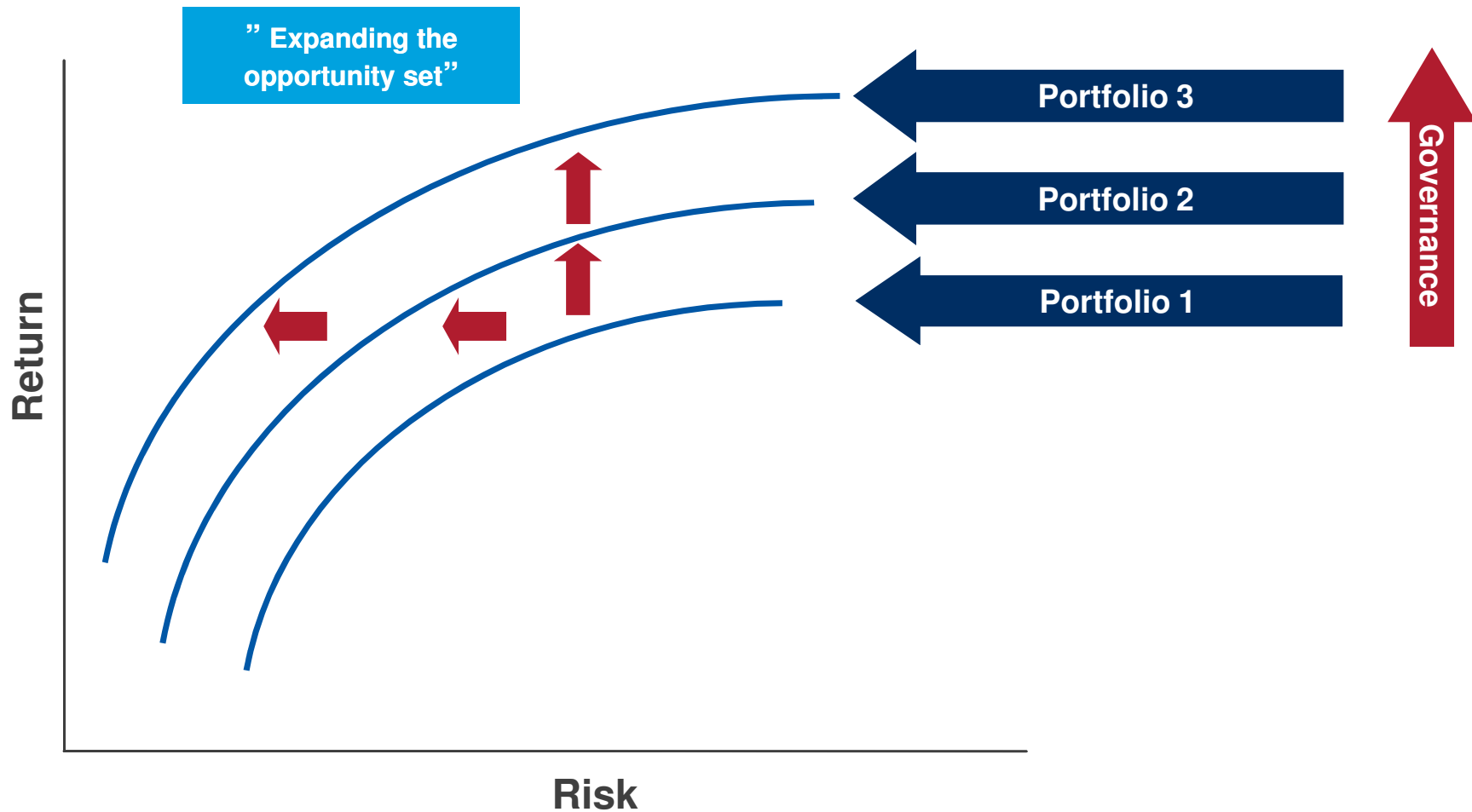
- Consider alternative investments in the context of the total portfolio (and liabilities), not on a stand alone basis
- Set up sub portfolios for alternatives with a broad mandate but a clear purpose (inflation-linked, long term, first mover, diversification etc.). Translate the goal in terms of required return, volatility, correlations, liquidity etc.
- Monitoring at sub-portfolio level, focusing on achieving the desired characteristics and continuous challenging of base assumptions.
- Add quantitative analysis and stress testing to standard quantitative methods of analysis.
- Make operational risk part of the total risk-return analysis.
- Negotiate exits (for instance key man, fraud, extreme losses etc.)
- Cooperate with other investors to improve negotiating power (fees, board seats) and sourcing possibilities

Alternatives require a higher level of governance and effort, but that should not be a deterrent for considering alternatives. Mercer can assist and facilitate sourcing, structuring and monitoring of investments outside the traditional spectrum.



No free lunch.

Essential question: Which new investment supplies marginally the highest risk return improvement at an acceptable extra effort?





Risk Warnings

© Copyright Mercer 2009

This report contains confidential and proprietary information of Mercer and is intended for your sole use. The report, and any opinions on or ratings of investment products it contains, may not be modified, sold, or otherwise provided, in whole or in part, to any other person or entity without Mercer's written permission.

This report contains information on investment management firms that has been obtained from those investment management firms and other sources. Mercer research documents and opinions on investment products (including product ratings) are based on information that has been obtained from the investment management firms and other sources. Mercer gives no representations or warranties as to the accuracy of such information, and accepts no responsibility or liability (including for indirect, consequential or incidental damages) for any error, omission or inaccuracy in such information other than in relation to information which Mercer would be expected to have verified based on generally accepted industry practices.

Any opinions on or ratings of investment products contained herein are not intended to convey any guarantees as to the future investment performance of these products. In addition:

Past Performance cannot be relied upon as a guide to future performance.

The value of stocks and shares, including unit trusts, can go down as well as up and you may not get back the amount you have invested.

The value of Gilts, bonds, and other fixed income investments including unit trusts can go down as well as up and you may not get back the amount you have invested.

Investments denominated in a foreign currency will fluctuate with the value of the currency.

The value of investments in real property can go down as well as up, and you may not get back the amount you have invested. Valuation is generally a matter of a valuer's opinion, rather than fact. It may be difficult or impossible to realise an investment because the property concerned may not be readily saleable.

The performance of with-profit policies depends on the profits declared by the Insurance Company and how these are distributed. Deductions for charges and expenses incurred by the Insurance Company are greater in the early years, and this affects the amount payable on early surrender.

MERCER



MARSH MERCER KROLL
GUY CARPENTER OLIVER WYMAN