

***BEST PRACTICE
IN PENSION FUND ASSET ALLOCATION & INVESTMENTS***

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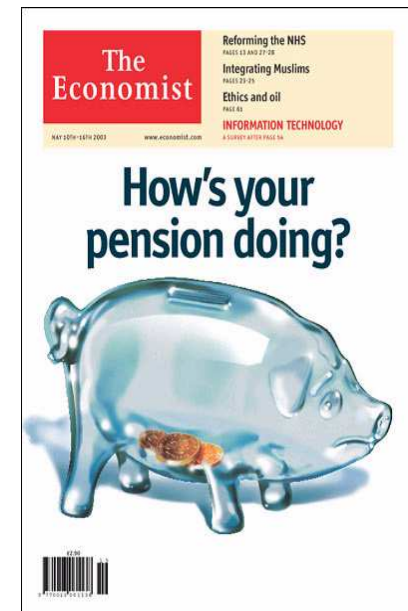
**IS STRATEGIC ASSET ALLOCATION
STILL KEY IN PORTFOLIO CONSTRUCTION?**

- What is dynamic allocation?
- Who should be responsible for AA, and what are the rewards for getting it right?
- Are there conflicts between optimum asset allocation and pension funding requirements?

Who should be responsible for AA, and what are the rewards for getting it right? **ORTEC**

.....and who suffers when getting in wrong

- **“BA staff face downgrade to the pensions”**
The Scotsman
- **“FSA uses fee income to plug its pension deficit”**
The Telegraph
- **“CBI fears effects of rigid funding rules”**
The Telegraph
- **“California’s teachers retirement scheme debates options for sustainability”**
The Sacramento Bee
- **“German industrial gas group Lind looks set to encounter further problems in its plans to acquire BOC..... likely to be a substantial deficit in the pension fund of BOC”**
Die Welt
- **“In addressing the pension deficit our aim has been to reach a result in the best long term interests of our employees and remains affordable to the company”**
BAe, Chief Executive Mike Turner



Who should be responsible for AA, and what are the rewards for getting it right? **ORTEC**

Richard Ennis,

Editors corner van de Financial Analysts Journal August **2007**:

“In short, institutional investors have generally failed to integrate portfolio investment policy in the larger context of the circumstances of the bearer of investment risk.

Why?

Why have ostensibly sophisticated and well advised institutions not heeded the first lesson of portfolio theory and integrated their risk decisions?”

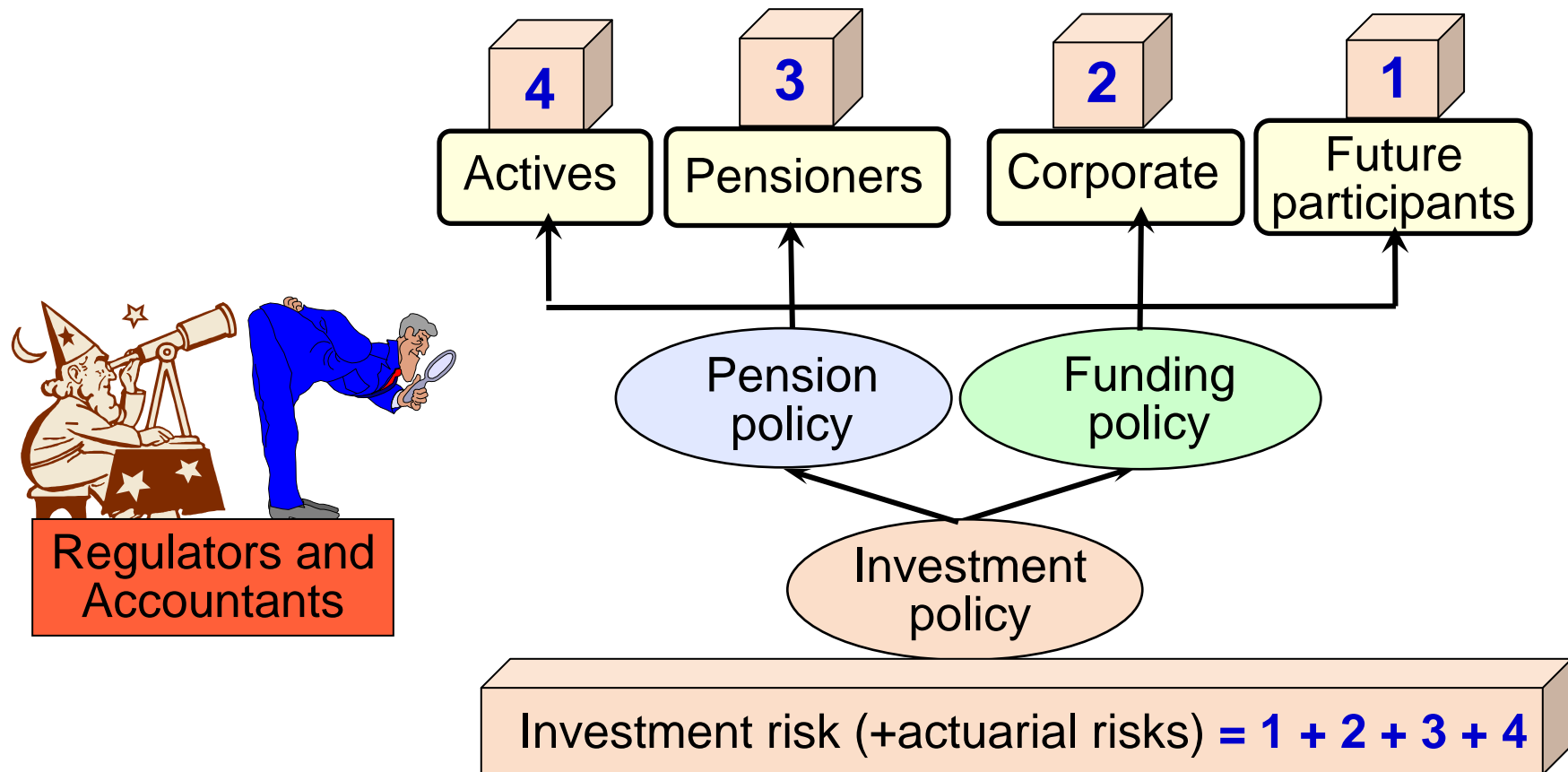
Bernstein 2005

Point of inflection III:

Escape from benchmarking to Liability Driven Investing:

Who should be responsible for AA, and what are the rewards for getting it right?

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Holistic ALM for pension plans:

- take into account all direct and indirect stakeholders
- all risk has to be accounted for: Long and short term
- fair pension deal: all stakeholders get fair reward

Who should be responsible for AA, and what are the rewards for getting it right? **ORTEC**

- Who is responsible for AA: **The Riskbearer**
 - Pension plans:
 - current and future participants
 - sponsor, especially in case of Defined benefit systems
 - Insurance companies:
 - shareholders
 - policy holders, especially in case of risksharing policies
 - Individuals (financial planning):
 - the individual
 -
- What are the rewards for getting it right? E.g.

Rule of Thumb: Capital growth
1% additional return during pension saving:
30% higher pension or 30% lower cost

Who should be responsible for AA, and what are the rewards for getting it right? **ORTEC**

- World wide tendency: increasing **transparency** and **regulation** in:
 - **Who** bears the risk
 - **Who** gets the return

John Bogle, *FAJ*, Nov/Dec 2005, Returns 1983-2003

S&P 500 Index Fund



12.8%

Average Fund Return



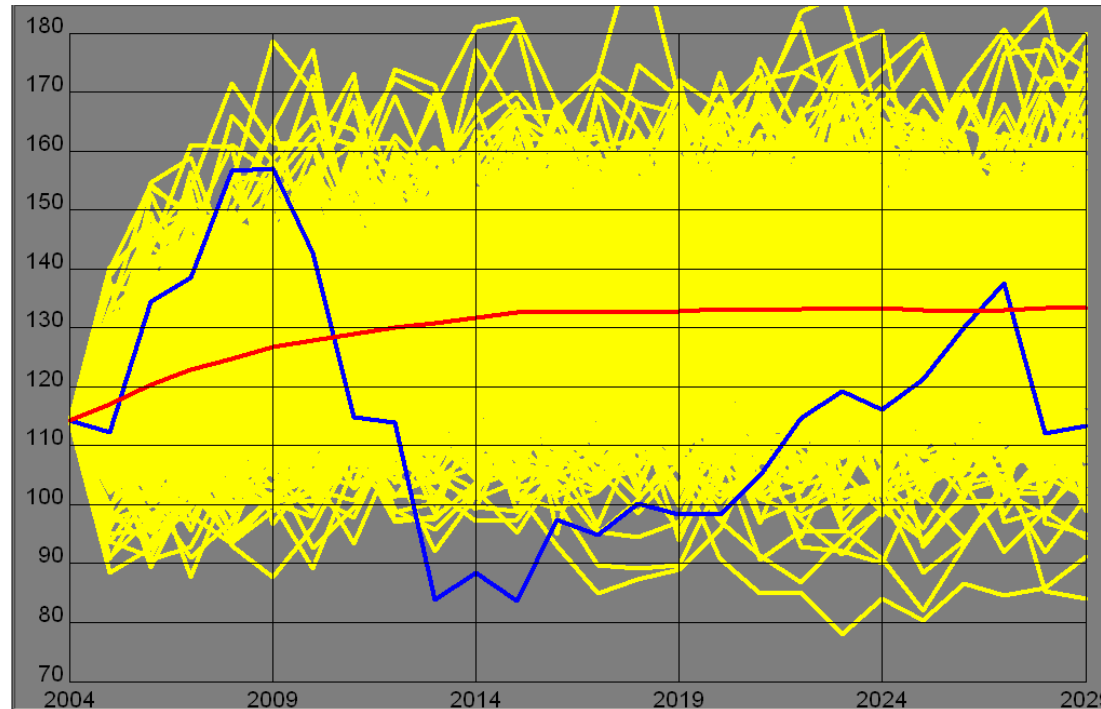
10.0%

Average Investor Return



6.3%

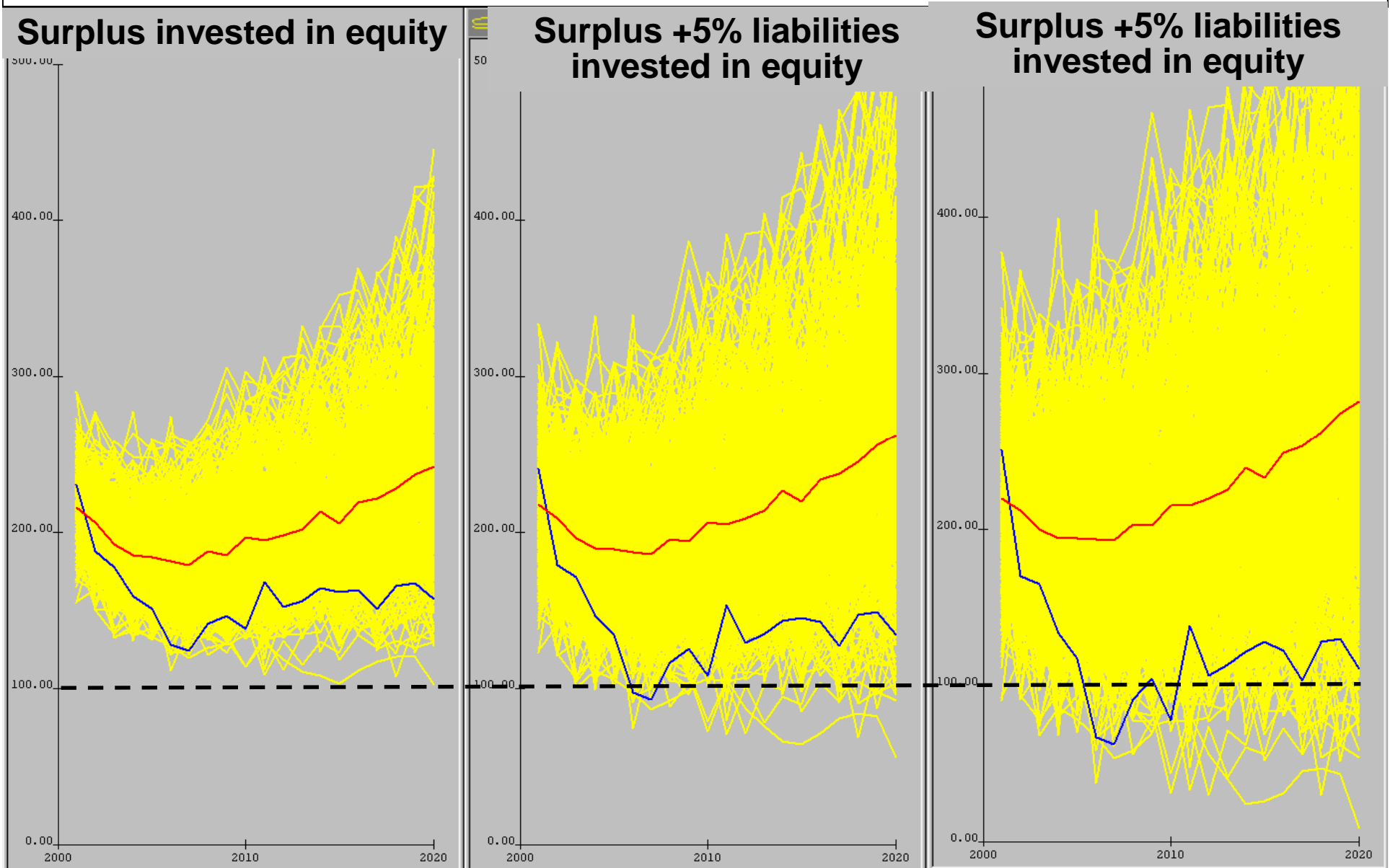
- E.g. scenario of the funded ratio of a pension plan



- Decision I: Optimal AA-exposure in steady state:
 - “natural” SAA, “wished” SAA
- Decision II: **Dynamic SAA**, i.e., Change the natural SAA in case:
 - **Financial markets** are estimated to be out of equilibrium
 - **Funded ratio** is out of equilibrium

- Dynamic SAA approaches:
 - **Fixed mix** (month, quarter, year)
 - sell high, buy low
 - “neglecting” disequilibria funded status and financial markets, with behavioral risk that risky assets are sold at worst moment
 - **LDI solutions**: LHP-portfolio + return portfolio such that 1 year ahead probability of underfunding is $x\%$ (0%, 2.5%)
 - 1 year ahead probability of underfunding is $x\%$ (0%, 2.5%)
 - “neglecting” long term relationships, e.g. correlation equity and inflation
 - ◆ One-year: -0.3
 - ◆ Long term: +0.4
 - Solvency trap!
 - **State dependent policies** (funded ratio, solvency ratio):
 - Theoretically superior
 - Practically vulnerable: Buy high and sell low
 - Etc

Equity mismatch of an insurance company: Scenarios of solvency ratio



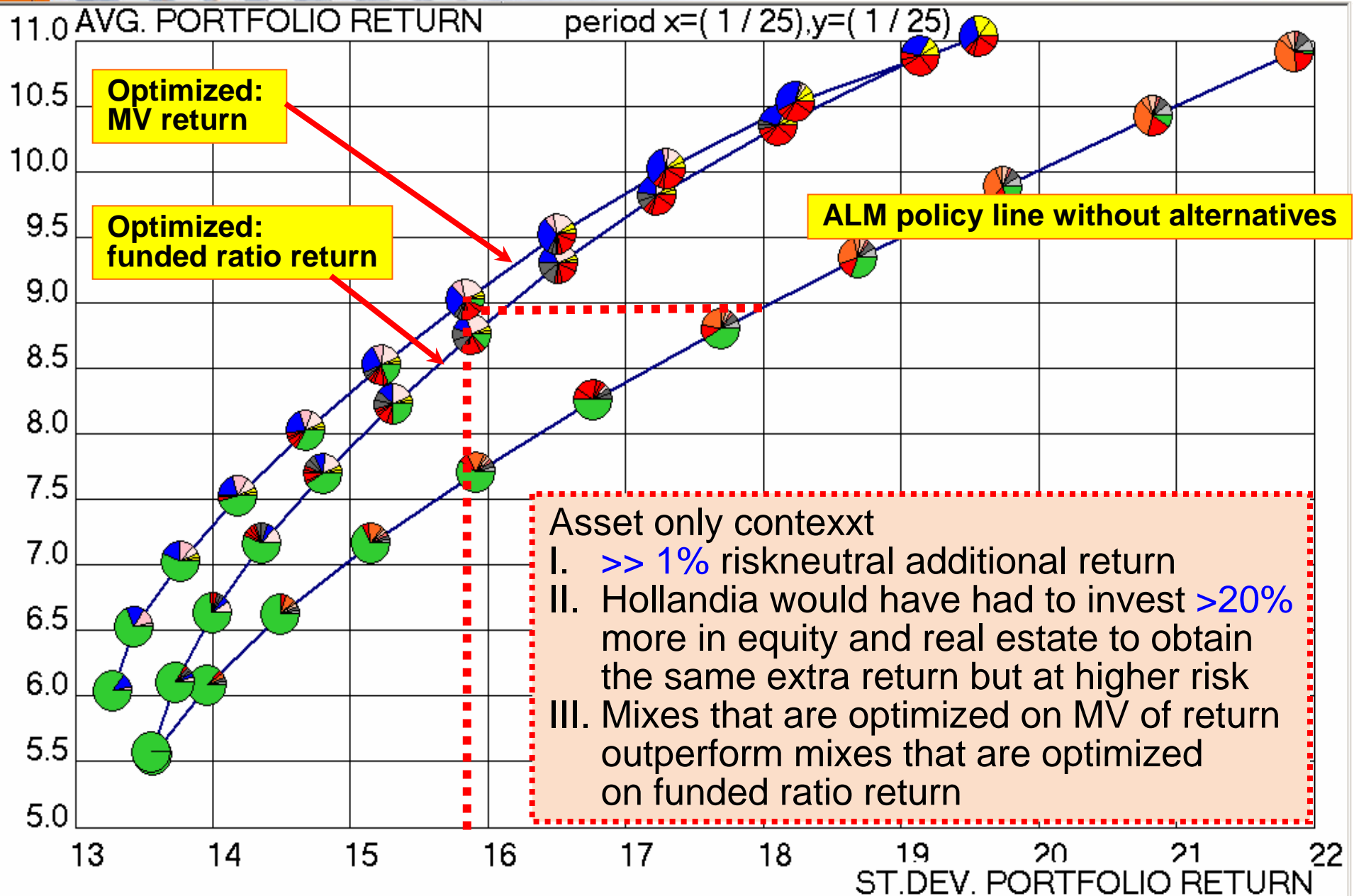
- Dynamic SAA approaches:
 - Many approaches
 - Determine objectives and constraints of clients first, and choose the best serving SAA-method second
 - Take into account implementation issues of theoretically optimal methods especially that risk is experienced differently when it is there.

Are there conflicts between optimum AA and pension funding requirements?

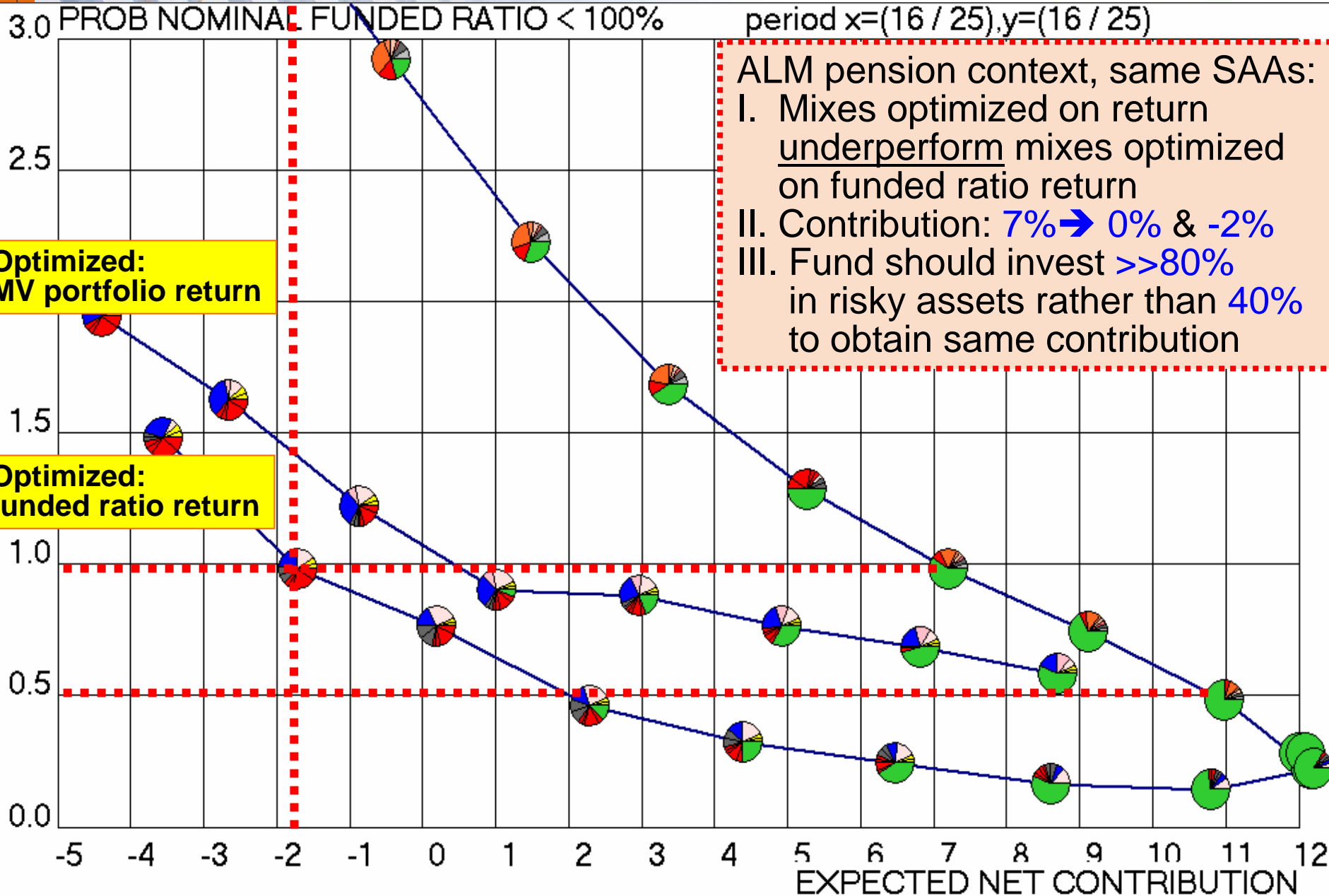
- Are there conflicts between optimum AA and pension funding requirements?
 - NO: if you do it right (section I and II)
 - YES if you do it wrong

- E.g.: Mean - variance optimization:
 - funded ratio return = percentual growth funded ratio
= $\{A(1+r_A)/L(1+r_L) - A/L\} / A/L = (r_A - r_L)/(1+r_L)$
 - use scenario's to determine means and covariance of funded ratio return for all asset classes
 - Return liabilities = -duration* Δ interest rates + "cash"
 - Hollandia is fully matched for interest rate risk: $r_L \approx$ cash

M-V “portfolio return” & “funded ratio return”: Asset-only context



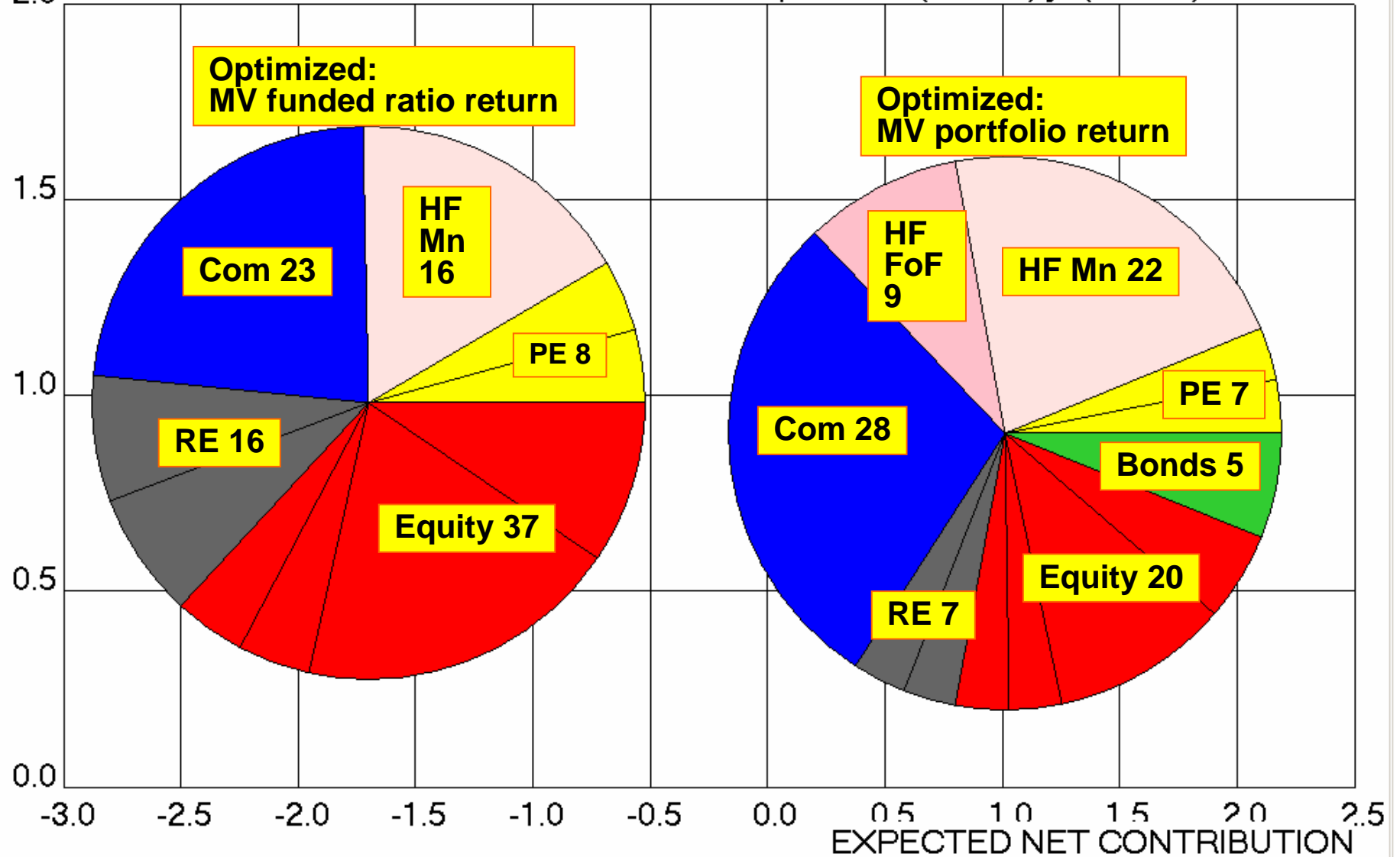
M-V “portfolio return” & “funded ratio return”: ALM pension context



Pies for the break

2.0 PROB NOMINAL FUNDED RATIO < 100%

period $x=(16 / 25), y=(16 / 25)$



- First take into account in SAA
 - The client
 - The liabilities of the client:
 - Amount of SAA-risk
 - Type of SAA-risk
 - Disequilibria of funded status and financial markets
 - Implementation issues

- ... and then choose the best serving SAA-policy