STICHTING
PENSIOENFONDS
HOOGOVENS

Matching and Return

The Hoogovens Pension Plan Experience

a concept for transparent, predictable and secure pensions

Presentation IMF seminar

Aging, Pension Risk Management and Financial Stability

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Jelles van As (jelles.vanas@pfhoogovens.nl)
CIO, Stichting Pensioenfonds Hoogovens

Agenda

- Introduction 'Hoogovens Pension Plan'
  - Our Finance Approach; what and why?
- Cash Flow Management
  - The impact of Immunizing Pension Liabilities and Risk Budgeting on portfolios and markets
- SPH Business Model for Efficiency and Transparency
  - The advantages of 'Cash Flow Management' and 'Matching and Return'

The Pension Plan

Stichting Pensioenfonds Hoogovens (Hoogovens Pension Plan)

- Dutch Company Pension Plan (compulsory), 36,000 participants
- Sponsor, employees (/ members): Corus Netherlands (steel company)
- Type: defined benefits, final pay (provisionally)
- Ambition of indexed pensions (conditional based on Dutch CPI)
- Maturing: 56% (value pension liabilities not active members / total pension liabilities)
- Contribution rate: 14% (approx. of salary)

- Asset Value : € 5.2 billion (2006)
- Equity weight : 20 %
- Solvency ratio[1] : 103 %

[1] Uses liabilities uplifted for (break even) inflation and mark to market (swap curve = discount rate)

What has changed?

More transparency is required

- Pension uncertainty (aging)
- (Potential) lower solidarity between generations
- Required information for financial products (risks, costs, etc.)

Lower risk level is desirable

- Accounting pension liabilities: valuations mark to market
- Regulatory supervision: risk (volatility) based solvency requirements *(Dutch: nominal)*
- New financial instruments (supply of inflation linked bonds and inflation swaps)

Need for higher efficiency

- Low surpluses, low return environment (2000 – 2003)
- Increasing costs of aging and longevity, lower risk appetite
- Weak contribution instrument

Regulatory changes do fit in social trends, but …..

nominal versus indexed pension liabilities is a management problem

Change of Pension Management

Traditional: sailing the ocean with only a compass

young pension plans manage long-term continuity tests (ALM)

Going forward: approaching the coastline with radar and compass

aging pension plans manage cash flows and continuity

Cash Flow Management and Continuity Tests
the right blend of short-term and long-term management.

Our Management Solution

Improved pension fund governance (financial management)

- Better understanding of the business (mark to market and **cash flow thinking**)
- Focus on the pension ambition (**indexed pensions**, including contingent obligations)
- Define long-term and short-term goals (annual risk budget and return target)

Improved finance strategy

- Optimise risk level, risk allocation and risk sharing
  (use of continuity tests, **risk budgeting and matching**)
- Optimise finance policy and financing structure of investments

Improved implementation efficiency

- **Separate 'matching and return'** management
- Use of 'cash flow matching' and annual financial planning (costs, returns, risks)

No change of the scheme, but change of pension management

Conclusion (1)

We do use ‘ Matching and Return’,

That may be triggered by changes in the environment:
- Mark to market pension liabilities
- accounting rules and regulatory supervisory framework
- sponsor creditworthiness and solvency
- risk sharing or risk appetite
- (free) market processes (more DC products)
- growing interest rate and inflation markets

but, is mainly

…. just because cash flow management improves our business efficiency.

An “aging” pension plan needs a lower risk level and transparency

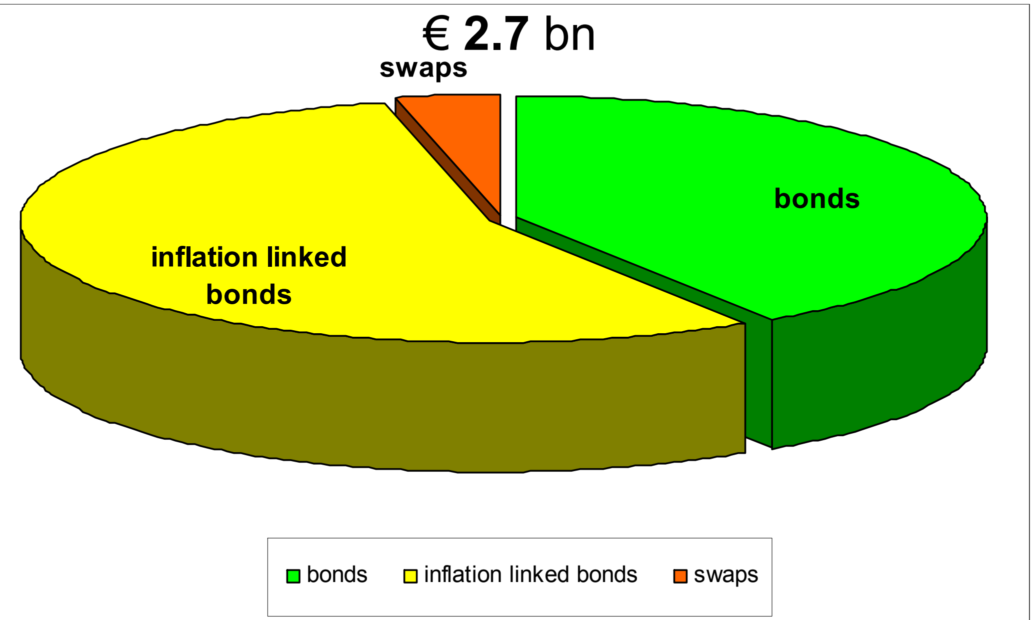
Immunizing Pension Liabilities

- Understand Pension Liability Cash Flows
- Portfolio technique: Cash Flow Matching
- Separate ‘Matching’ and ‘Return’

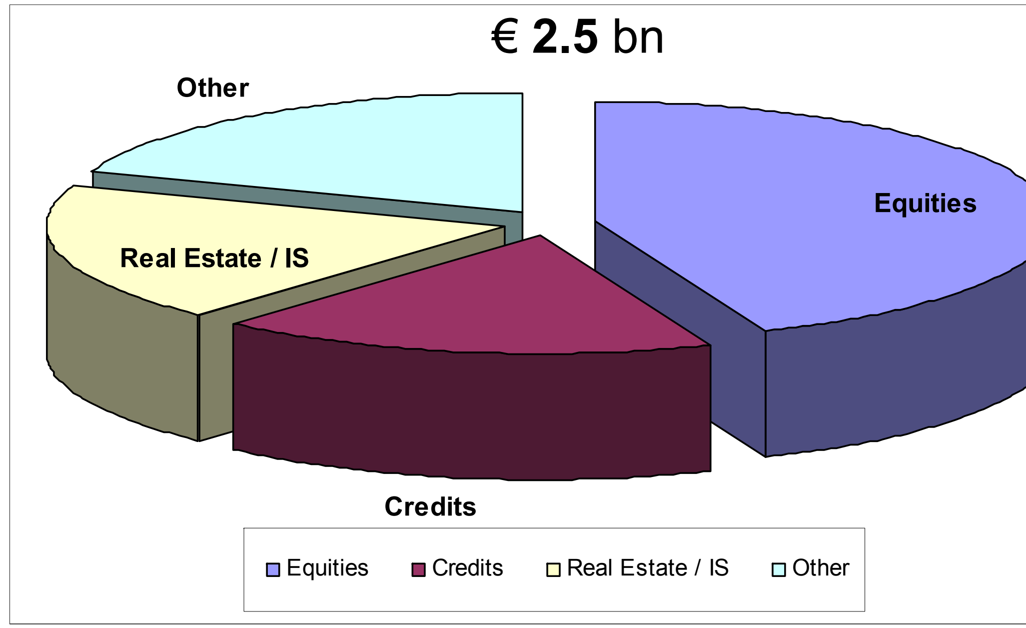
Asset Allocation: 2 targets – 2 portfolio’s

(total assets € **5.2** bn)

Matching Portfolio



Return Portfolio



Risk budget: tracking error 0.5%

Target return = return on pension liabilities

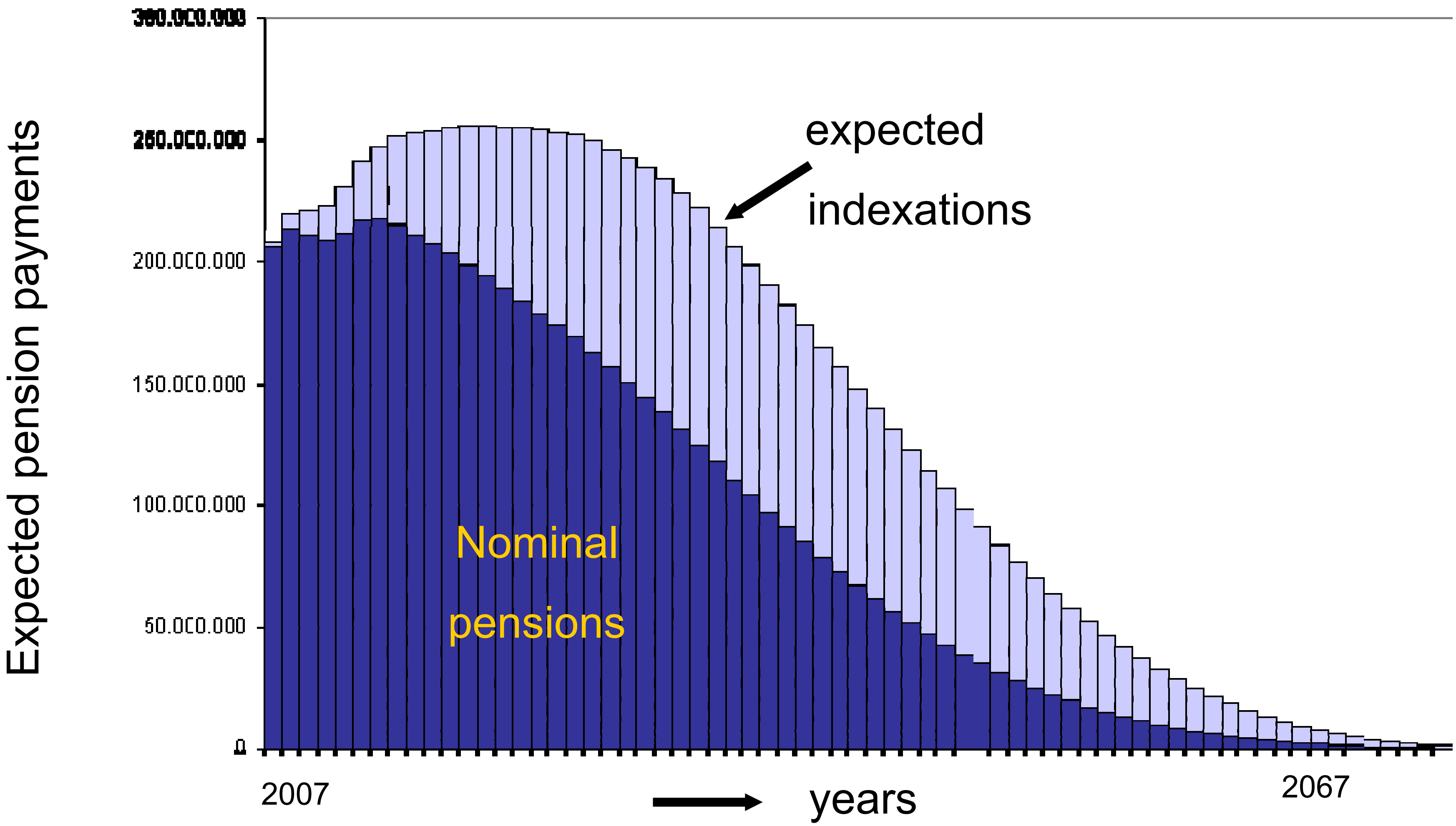
(pension liabilities € **5.0** bn)

Risk budget: 97.5% VaR € 330 mn

Target added value € 110 mn

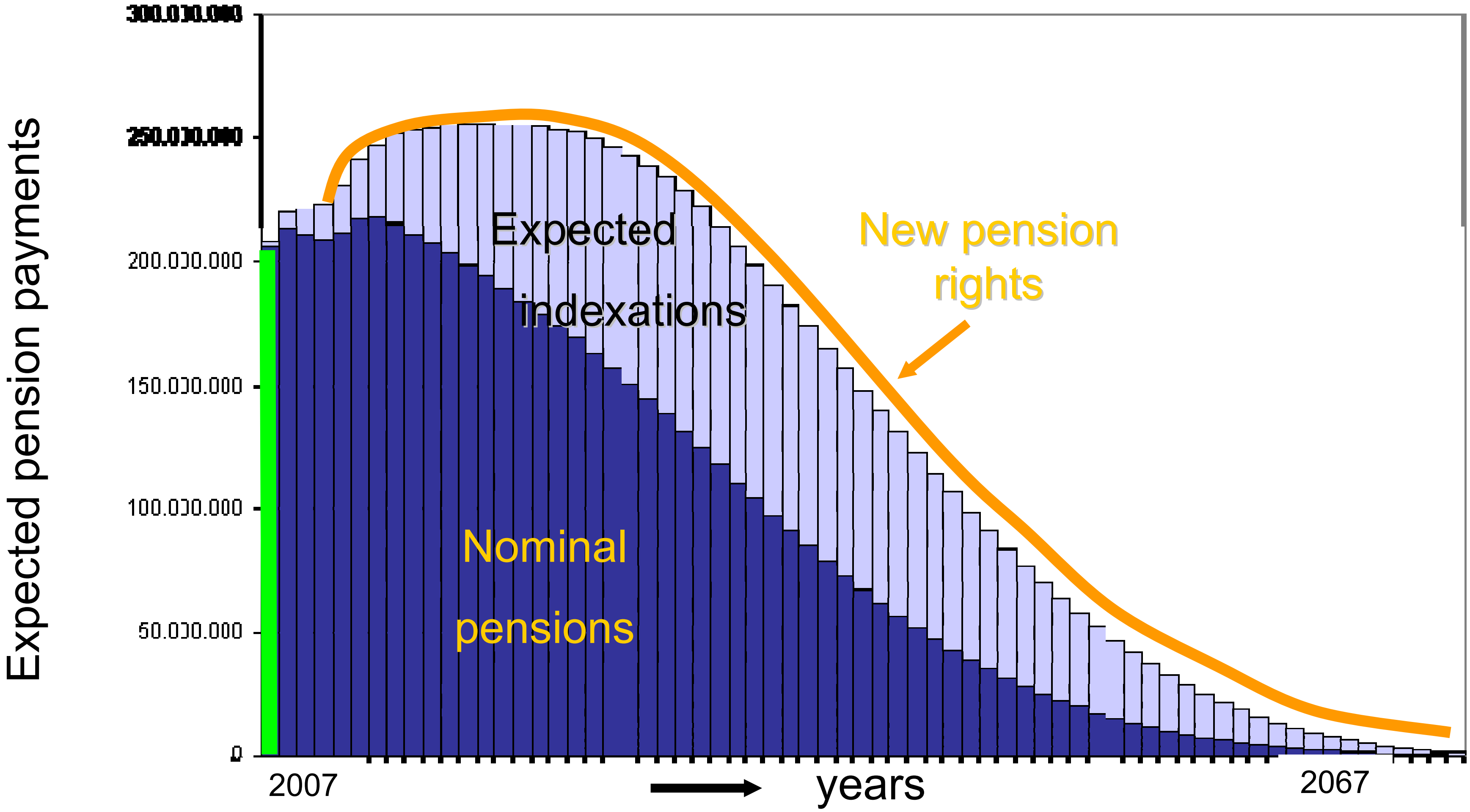
Separate ‘Matching’ and ‘Return’ : 2 separate business activities

Cash Flows of Target Pensions



Indexation ambition is 1/3 of all cash flows

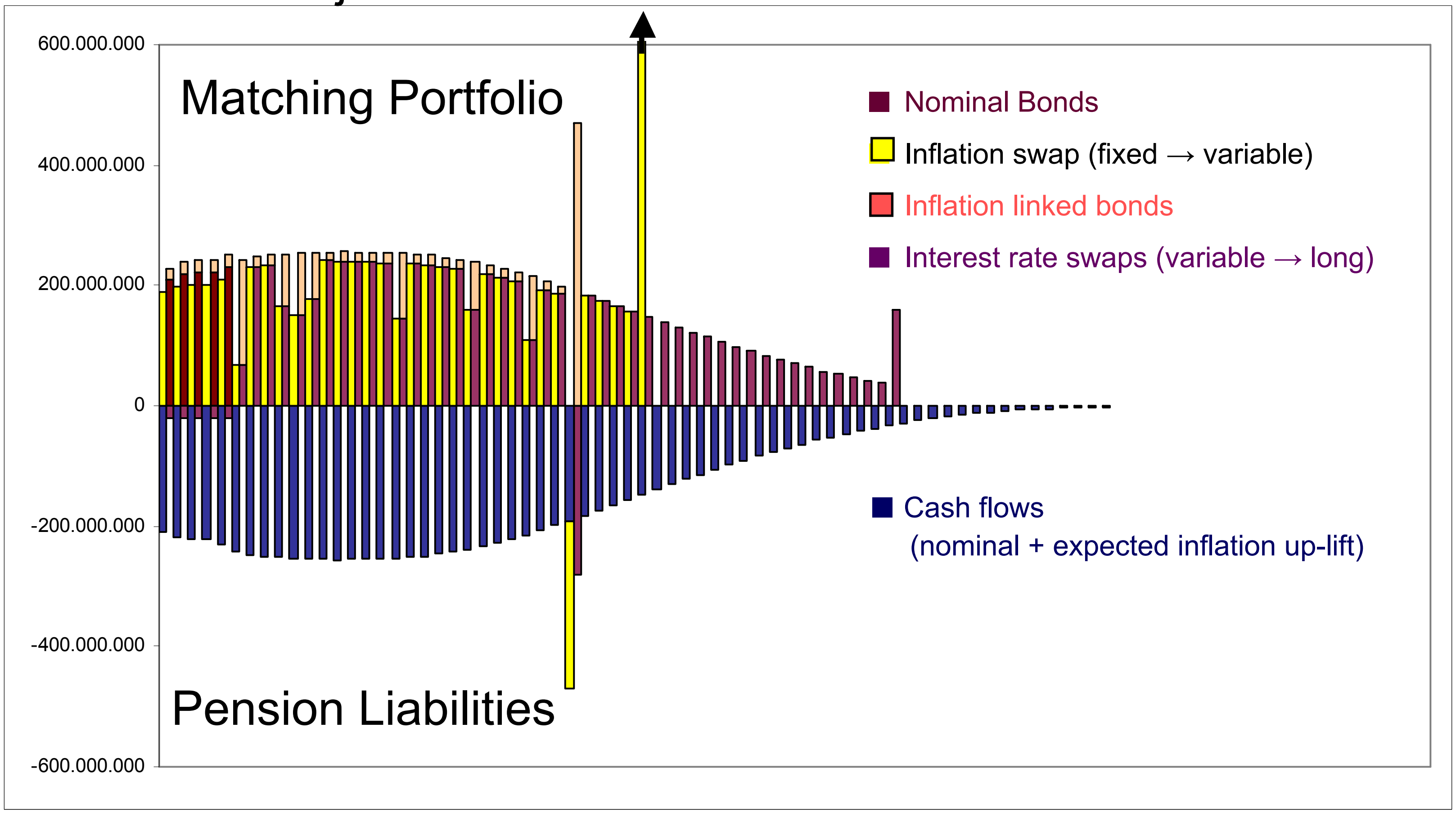
Dynamics of Pension Cash Flow



Understand and manage Liability Cash Flows

Liability-immunizing Portfolio

Cash Flow Projections



Optimal cash flow replication with bonds and swaps

Initial Trade Volume of Matching is Big

amounts in € billion

12-31-2006	Matching Portfolio		
	Value	duration	duration value
Nominal bonds and cash	1.1	3.8	4.2
Inflation linked bonds	1,5	13.4	21.7
Swaps	0.1	15.3	41.5
Total	2.7	13.8	67.5
Pension Liabilities	5,0	13.8	67.5

amounts in € x billion

Swap Portfolio		
	value	value long leg
Interest rate swaps	0,3	2.5
Inflation swaps	- 0,2	3.5
Total	0.1	

…., but annual maintenance is less than 5% of total pension liability cash flows

Conclusion (2)

Matching pension liabilities has
no structural impact on financial markets.

- In 2004 interest rate and inflation characteristics were acquired
- Maintenance has no exceptional impact on financial markets

Pension Management = Cash Flow Management

Pension Plan Efficiency and Transparency

Business efficiency

- Invest only in ‘rewarding risks’, full hedge of pension liabilities *(matching portfolio)*
- Structure a portfolio of investments with maximal Sharpe Ratio *(return portfolio)* (returns, diversification and financing costs)
- Relate the ‘risk budget’ directly to the ‘target added value’

Transparency

- Use common business reporting and planning

Separation Theorem for surplus optimisation* is not ‘new’, but……the implementation

*Bazdarich Michal J., Separability and Pension Optimization, the Journal of Fixed Income, winter 2006

Pension Plan Efficiency

Strategy: alpha per unit of risk

expected return: Liability return + **€ 110 mn.**

target excess return (2% of LUM)*

exp. solvency risk : € 360 mn.

97,5% 1 year VaR (volatility: 3%)

No impact accounting rules

pension plan efficiency ratio: 0.7 PP-ER

And meeting all other financial targets:

- ALM continuity tests show long-term acceptable costs and inflation proof

expected **contribution level 13.5 % (of salary)**

expected **indexation level 98 %**

- Compliant with regulatory requirements

probability of under funded 0.3 %

No impact regulatory requirements

* LUM is Liabilities under Management

Conclusion (3)

Pension Fund Challenges?

DB, final pay, mark to market liabilities, ‘weak’ sponsor, ‘fixed’ contribution rate, fully indexed liabilities, an ‘aging’ pool of participants, accounting and regulatory restrictions…

… it is still possible to run a pension business and meet all financial targets.

Solved through the business efficiency…of cash flow management !

Annexes / Supplement

FTK / MFR

Mark to market

Risk budgetting

LDI

Swaps

Cash Flows

CDC

DB

DC

Sox

FRS

First Pensions

Concepts for transparent, predictable and secure pensions

manage the pension plan as a company

… otherwise the Investment Bank will ultimately do it for you…

Balance Sheet ('traditional' setting)

Assets		Liabilities	amounts in € million
Fixed Income		**Pension Liabilities**	
portfolio	€ 2,667	nominal plus inflation	€ 5,016
Equities	€ 1,083		
Credits	€ 488		
Real estate	€ 474		
Other	€ 494		
		Surplus	€ 190
Total	€ 5,206	**Total**	€ 5,206

The balance sheet:
only the mark to market value of the swaps in fixed income portfolio

Balance Sheet (incl. swap exposures)

Assets		Liabilities	amounts in € million
Matching portfolio		**Pension liabilities**	
portfolio	€ 2,667	nominal plus inflation	€ 5,016
long leg swaps	*€ 2,349*		
Return portfolio	€ 2,539	**Debt**	
		short leg swaps	*€ 2,349*
		Surplus	€ 190
Total	€ 5,206	**Total**	€ 5,206
	€ 7,555		*€ 7,555*

Long exposure of IR-swap and short debt of IR-swap are shown.

Balance Sheet

(How are the investments financed?)

Assets		**Liabilities**	amounts in € million
Matching portfolio		**Pension liabilities**	
portfolio	€ 2,667	nominal plus inflation	€ 5,016
long side swaps	*€ 2,349*		securitisation?
Return portfolio		**Debt**	
equities	€ 1,083	short interest rates	€ 1,083
credits	€ 488	short interest rates	€ 488
real estate	€ 474	long interest rates	€ 474
other	€ 494	short interest rates	€ 304
		Surplus	€ 190
Total	€ 2,539	**Total**	€ 2,539

Structure (and finance) a return portfolio with maximum Sharpe Ratio

Profit and Loss Account (example 2006)

Turn over			amounts in € million
Return on Investments	€ 55		
Financing costs (return pension liabilities)	€ -160 -		
Total added value on investments		**€ 215**	
Costs			
Service costs (addition to pension liabilities)	€ - 150		
Contributions	€ 90 +		
Result on contributions		**€ - 60**	
Costs (execution, etc)	€ - 8		
Costs additional pension rights	€ - 70 +		
Operating expenses		**€ - 78** +	
Operating result			**€ 77**
Extraordinary gains and losses			
Mismatch inflation pressure pension fund			**€ - 38** +
Profit (available for surplus)			**€ 39**

How did we perform?

4 Business Activities ; 4 Results

(Why do we take investment risk?)

			amounts in € million	target
Result on matching				
Return matching portfolio	€ - 143			
Return on (accumulated) liabilities	€ - 160 +			
Total added value		**€ 17**		*0*
Result on investments				
Gross return on return portfolio	€ 255			
Costs of financing (interest)	€ - 57 +			
Net added value		**€ 198**		*90*
Result on contribution		**€ - 60**		*-60*
Operating Expenses		**€ - 78 +**		- 8
Operating result			**€ 77**	
Extraordinary gains and losses				
Mismatch inflation pressure pension fund			**€ - 38** +	*0*
Profit (available for surplus)			**€ 39**	*22*

Risk Allocation

(How do we take investment risk?)

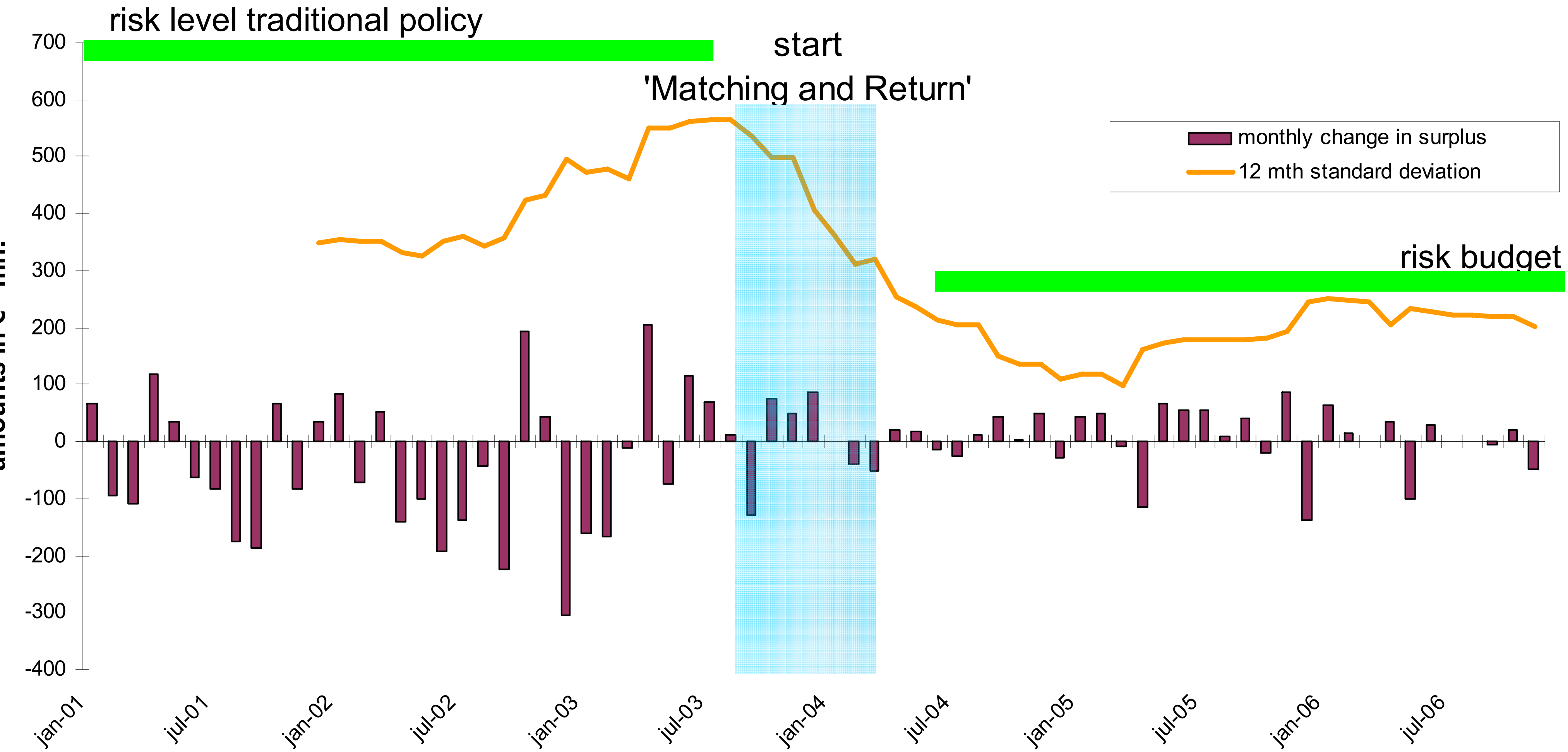
Risks as 97,5% 1 year VaR in € mn

			risk budget	Traditional
Matching portfolio				
Cash flow mismatch	€ 13			
Swap spread risk (!)	€ 39 +			
Total mismatch		**€ 42**	*(50)*	*450*
Return portfolio				
Equities	€ 280			
Credits	€ 40			
Real Estate	€ 40			
Absolute Return	€ 20 +			
Total Investment Risk		**€ 284**	*(330)*	*600*
Financing risk				
Short-term debt	€ 8			
Long-term debt	€ 19 +			
Total Financing Risk		**€ 21**	*(25)*	*0*
Surplus at Risk		**€ 288**	*(360)*	*770*

Cut the risk budg
in half

Probability of under 100% (real) *15%*
Probability of under mfr (nominal 105% + buffers) *0%*

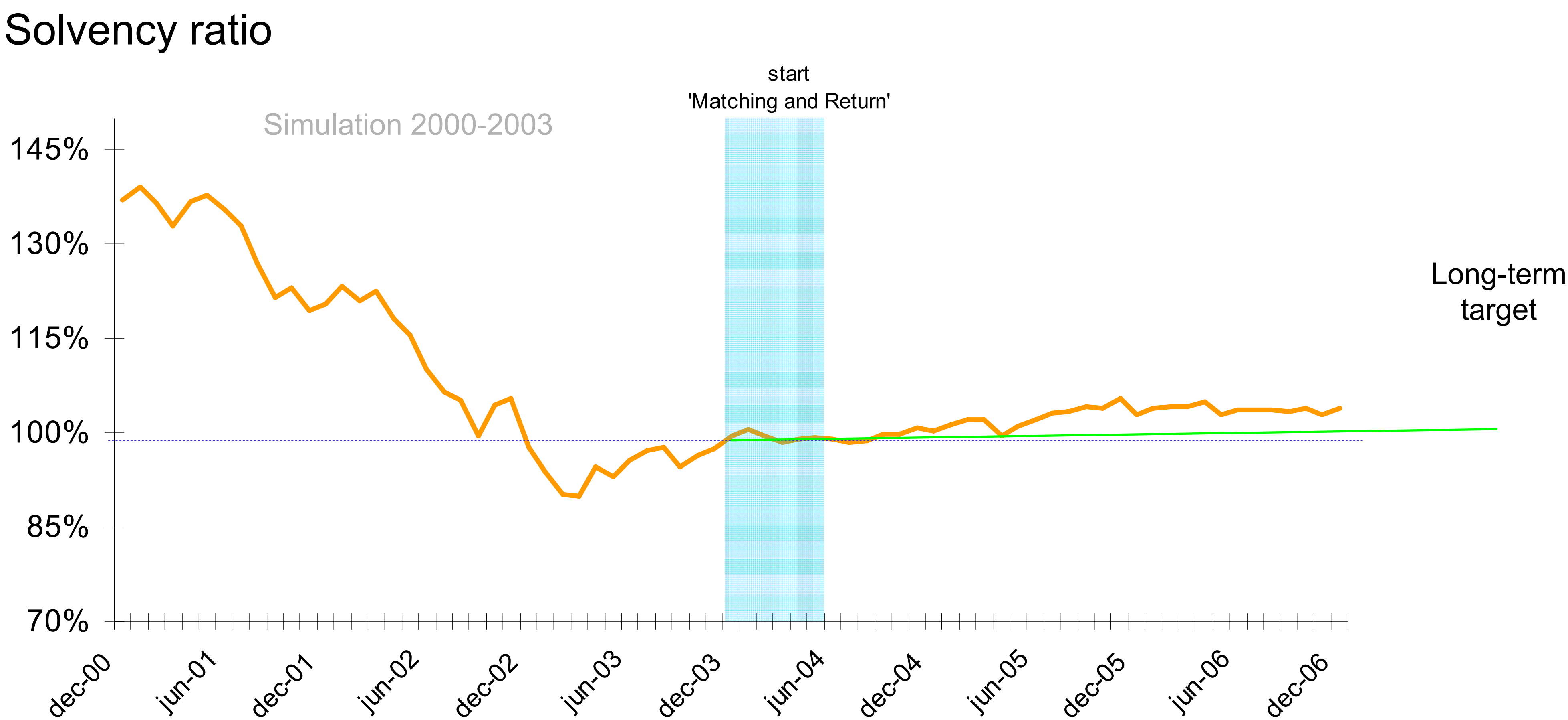
Results: Solvency Risk



Solvency risk decreased after matching (and return)

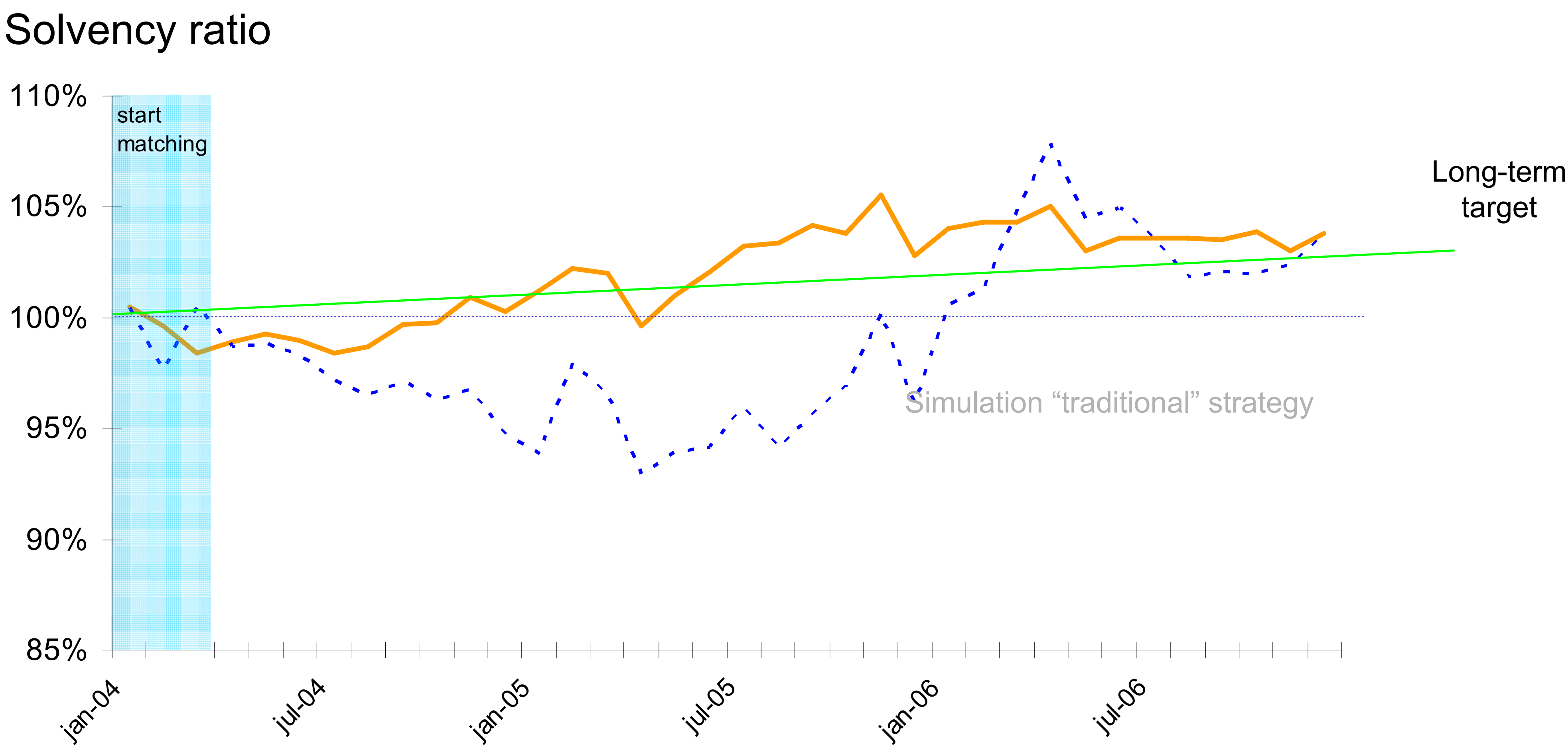
Results: Solvency Ratio

Mark to market liabilities



Solvency stabilised <u>and</u> mark to market pension liabilities

Results: “Traditional” versus “New” Strategy



With “Matching and Return”: better on track

- Concentrate on your own goals
- Use an efficient corporate finance approach
- Don’t worry about a high peer group risk

…..and

deliver transparent, predictable and secure pensions