Active Management of

The Government Pension Fund Global

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Ministry of Finance Seminar

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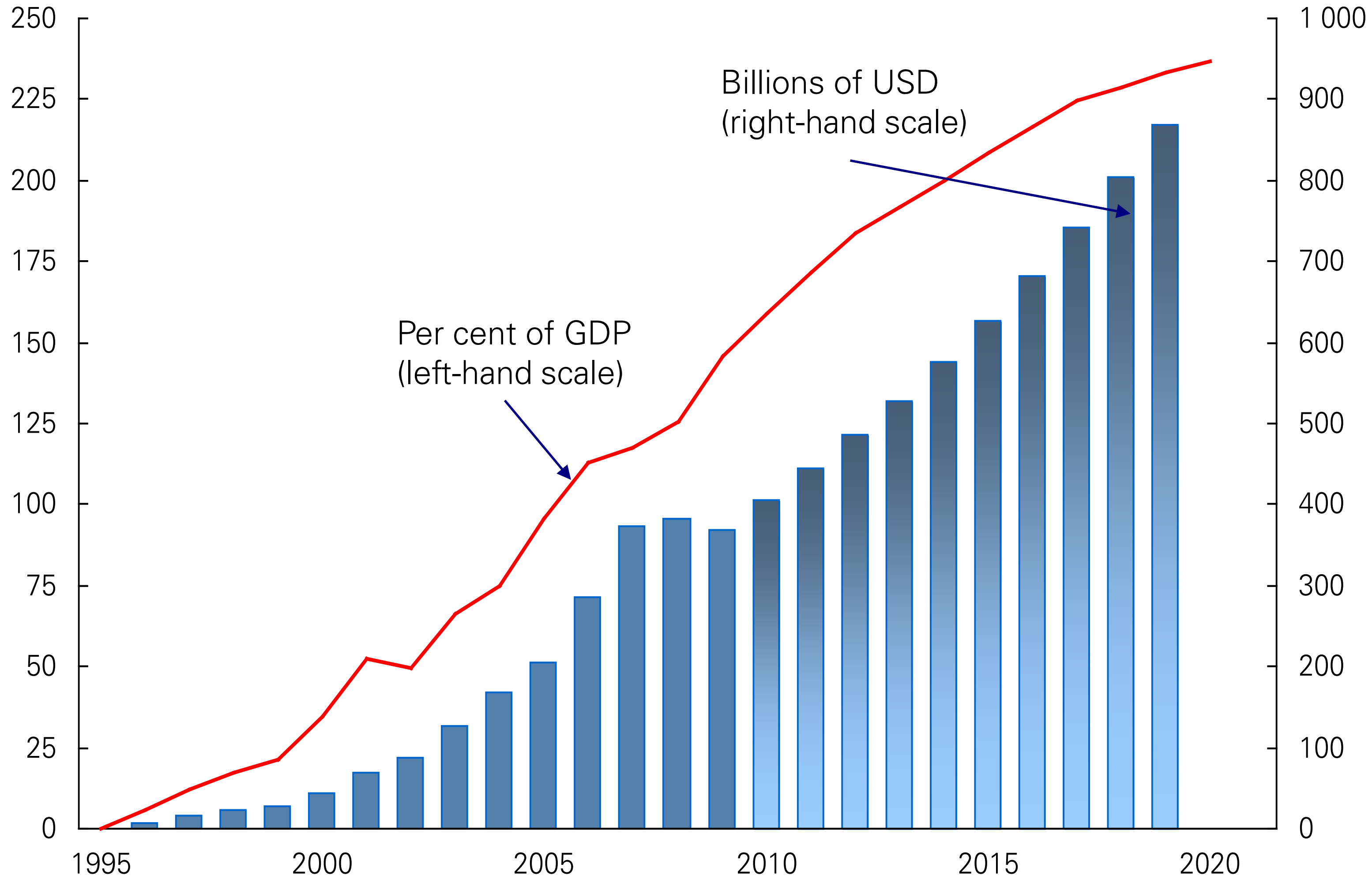
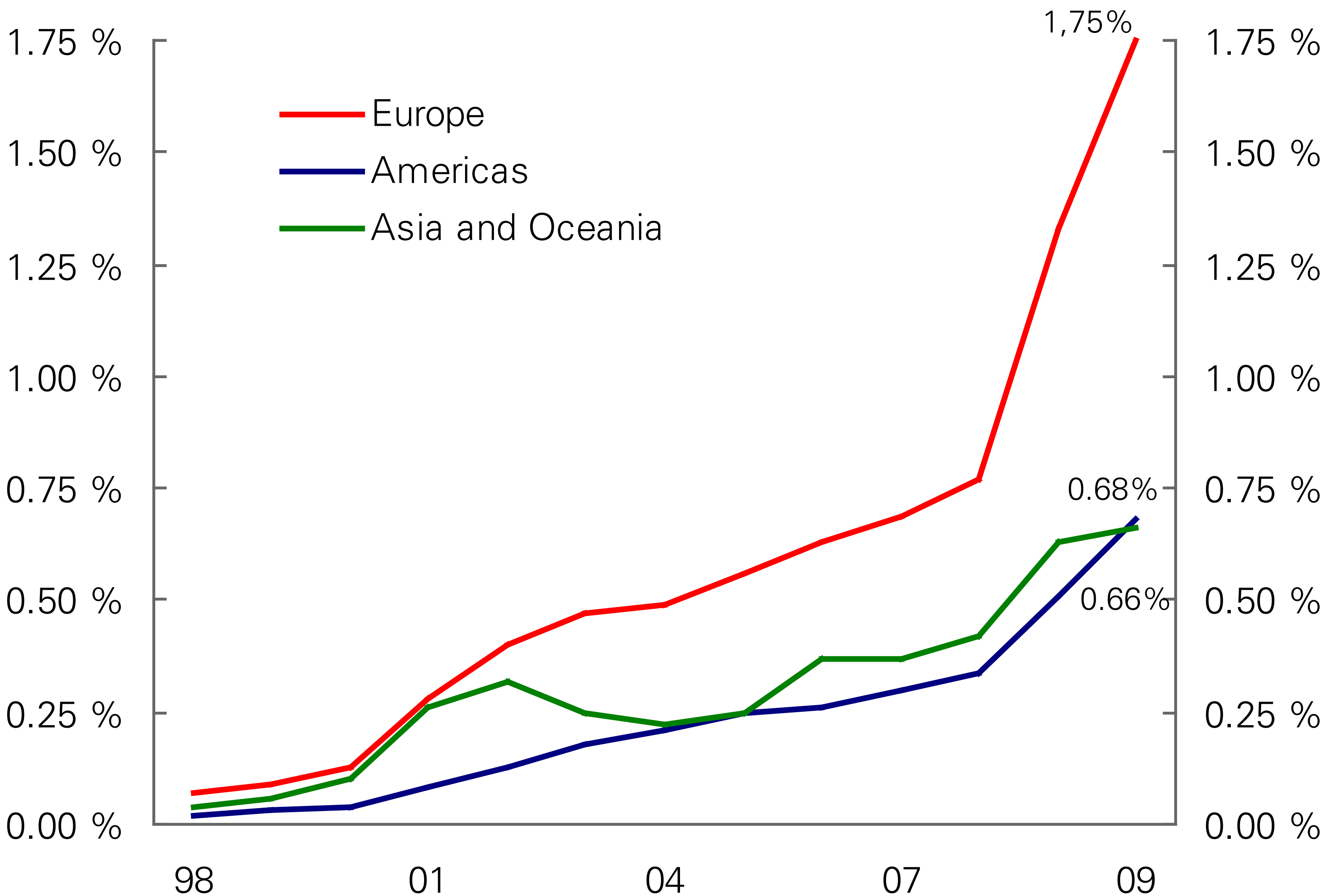
The Government Pension Fund Global

Government Pension Fund Global

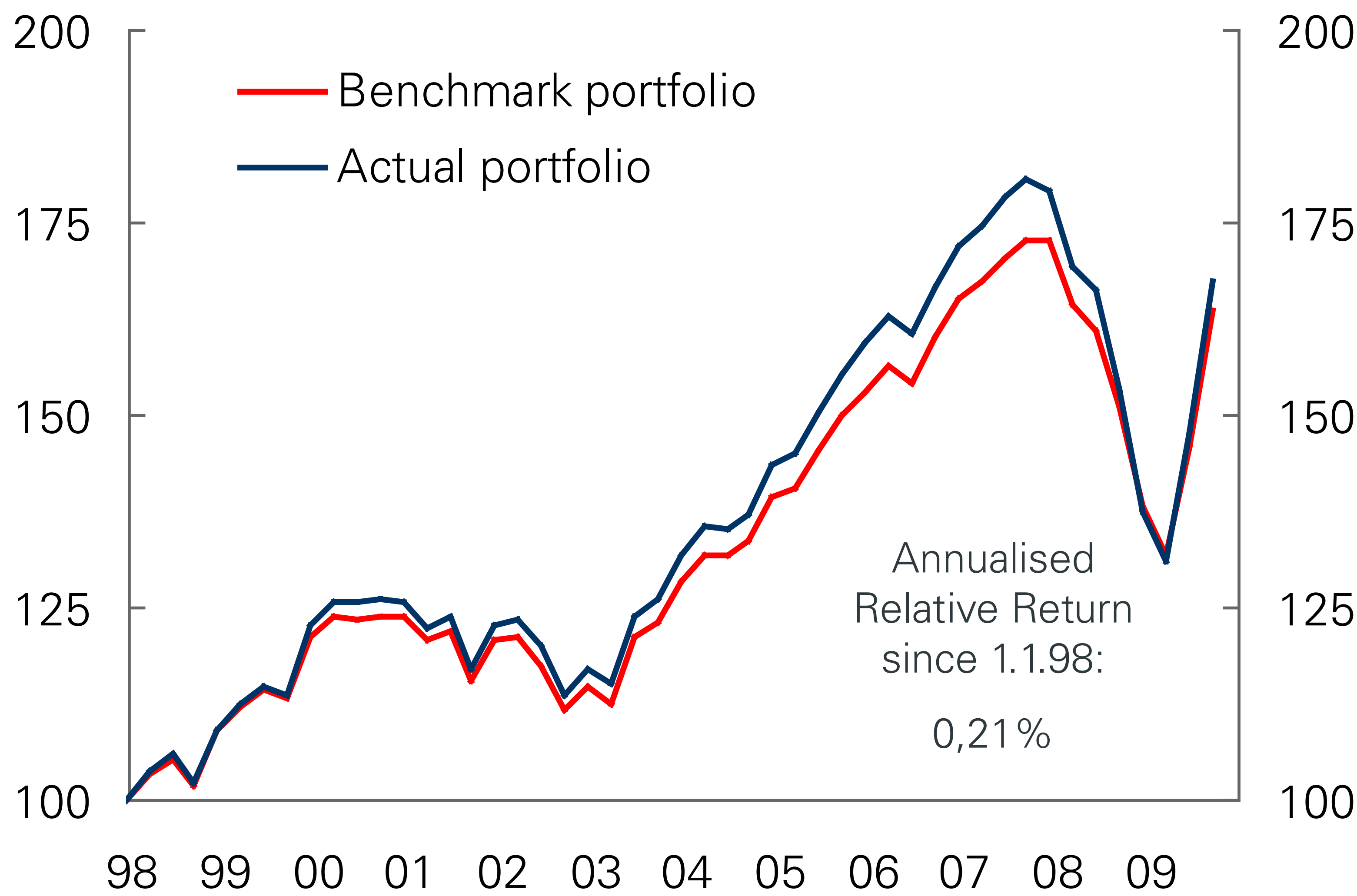


Sources: Ministry of Finance and Norges Bank

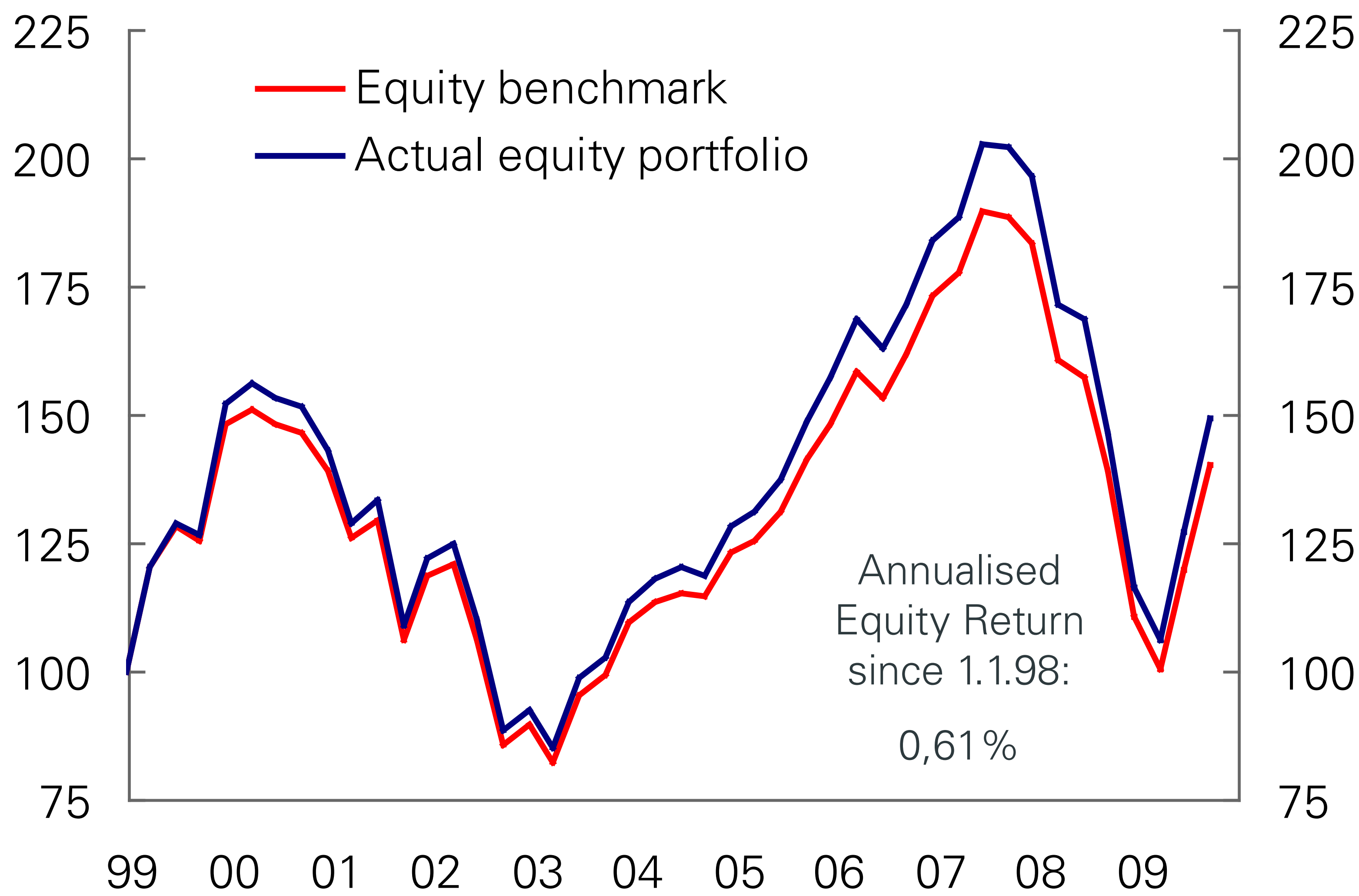
Equity Ownership in Percent of Markets



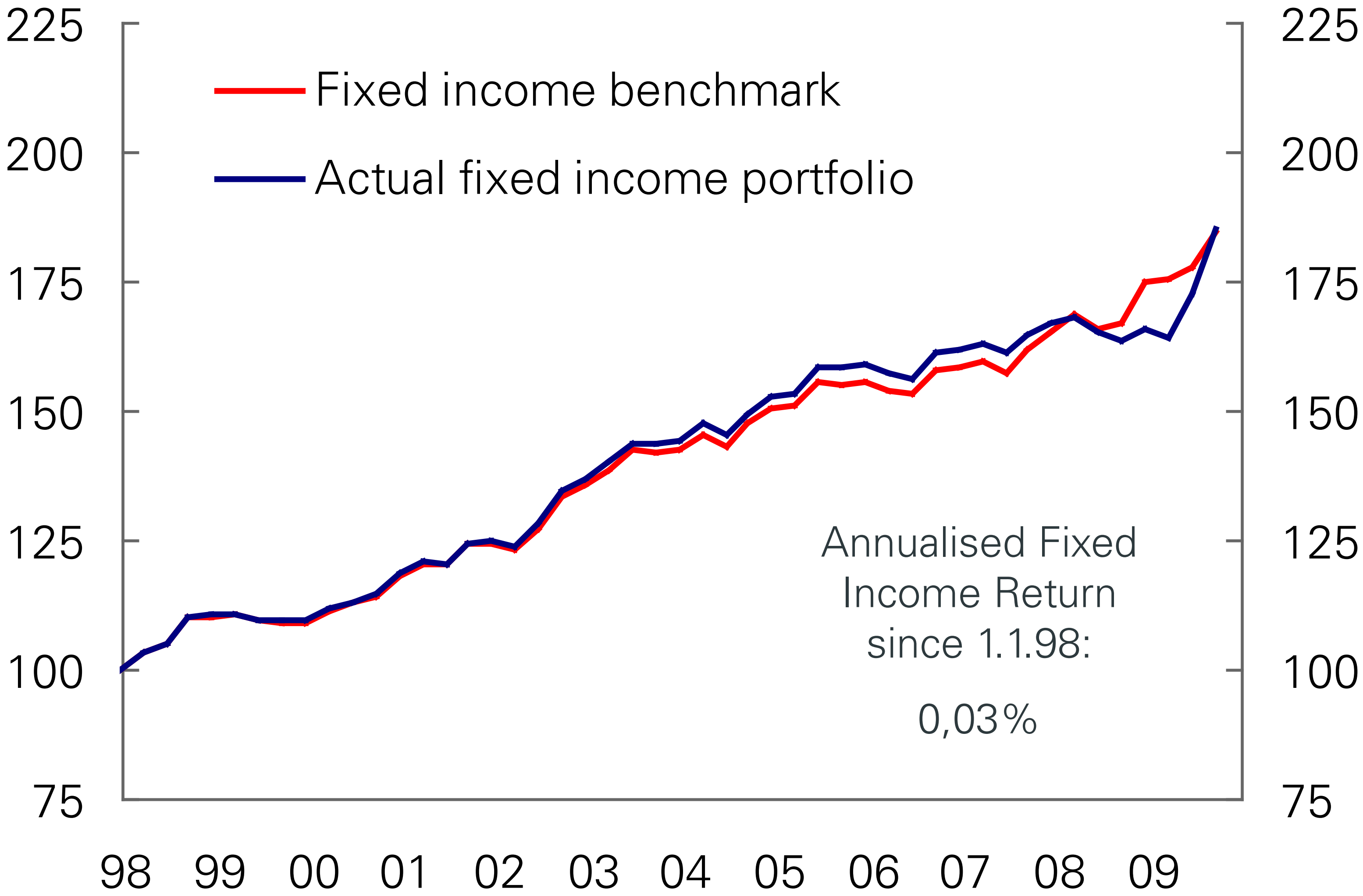
Relative Return - Fund



Relative Return - Equities

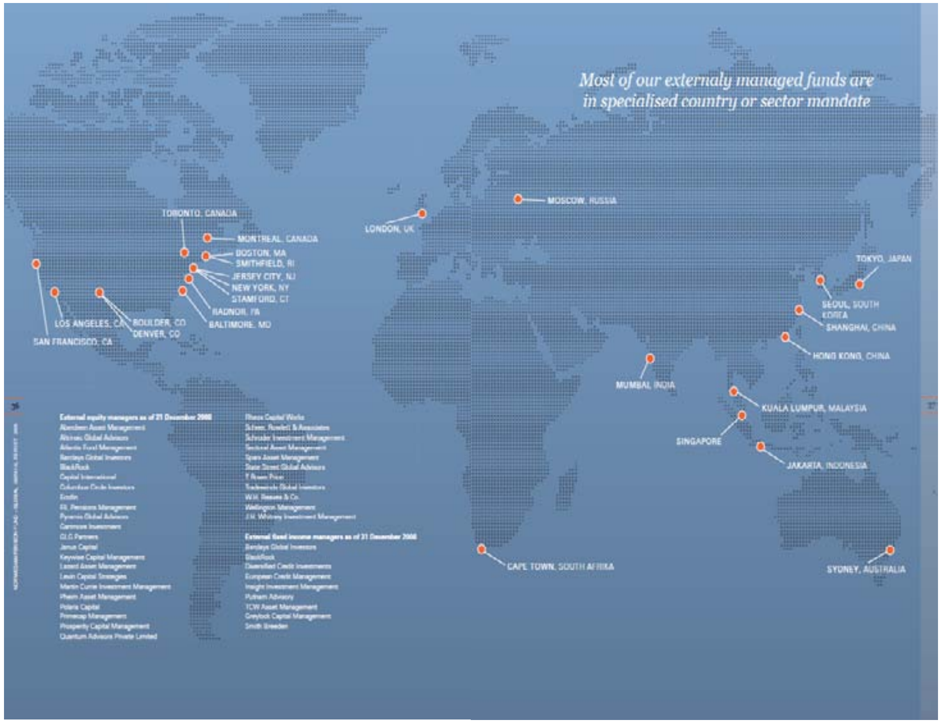


Relative Return – Fixed Income



NBIM's Five Tasks

1. Transition of new assets into the global capital markets
2. Cost efficient market exposure
3. **Create excess return relative to the benchmark through active management**
4. Safeguard long-term financial interests through active ownership
5. Advise the Board and Ministry of Finance on strategic issues



NBIM's Letter on Active Management

to

The Ministry of Finance

The Questions Asked

- Are Markets Efficient?
- Why Active Management?
- Which Type of Active Management?

Are Financial Markets Efficient?

Chapter 1.1 – 1.2

Are Financial Markets Efficient?

- Academic literature has become more nuanced
  - Constraints on financing, risk capacity
  - Investor segmentation
  - Changing and time-varying risk factors

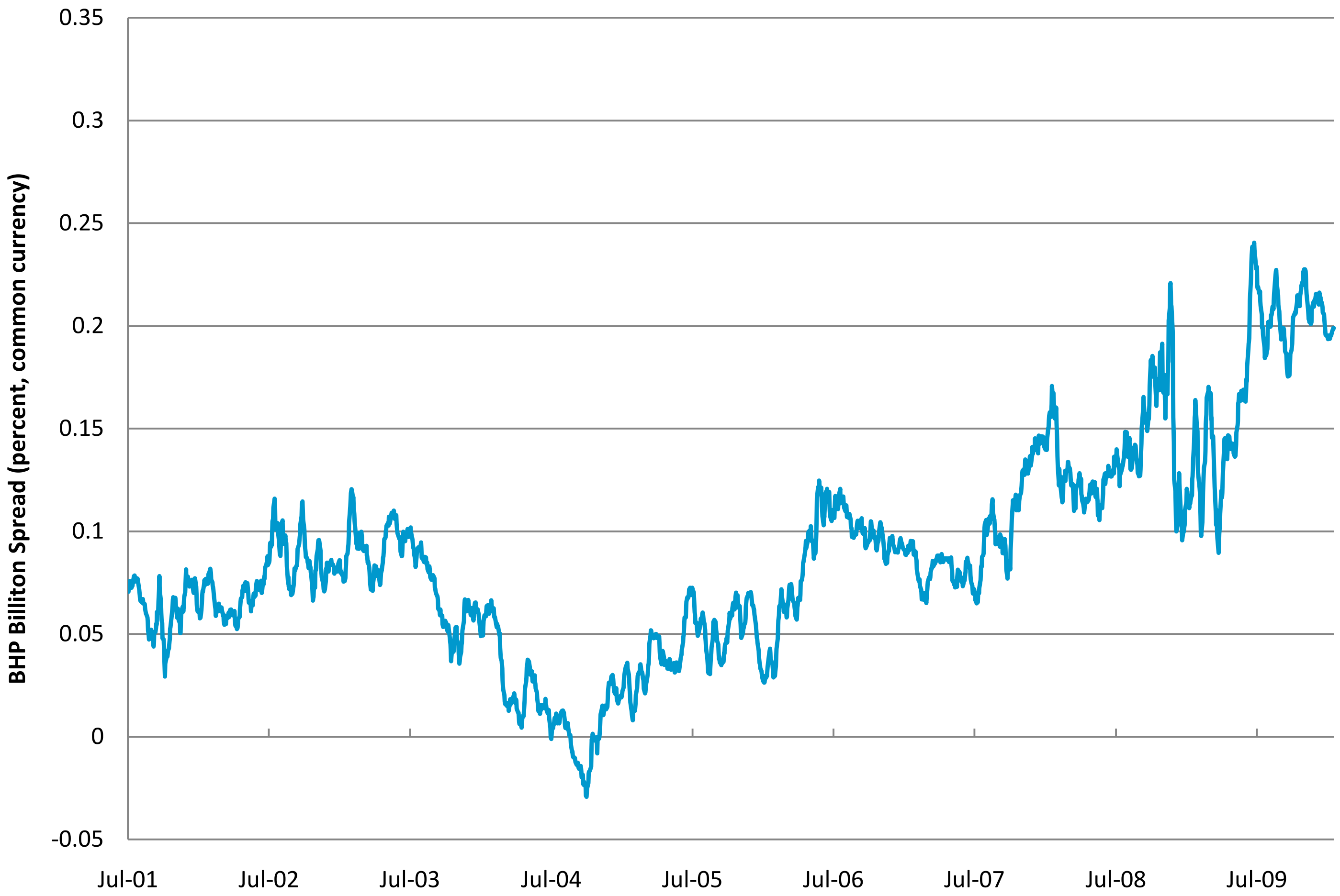
Degree of Efficiency Varies

- Between markets
- Over time
  - Market stress and financing constraints
- As pricing may not be uniform globally or by instruments
  - Investor and market segmentation
- Over investment horizon

Theory suggest it is possible to create value through active decisions

Are Financial Markets Efficient?

- Even dual stock exchange listing may incur price differentials



External Management

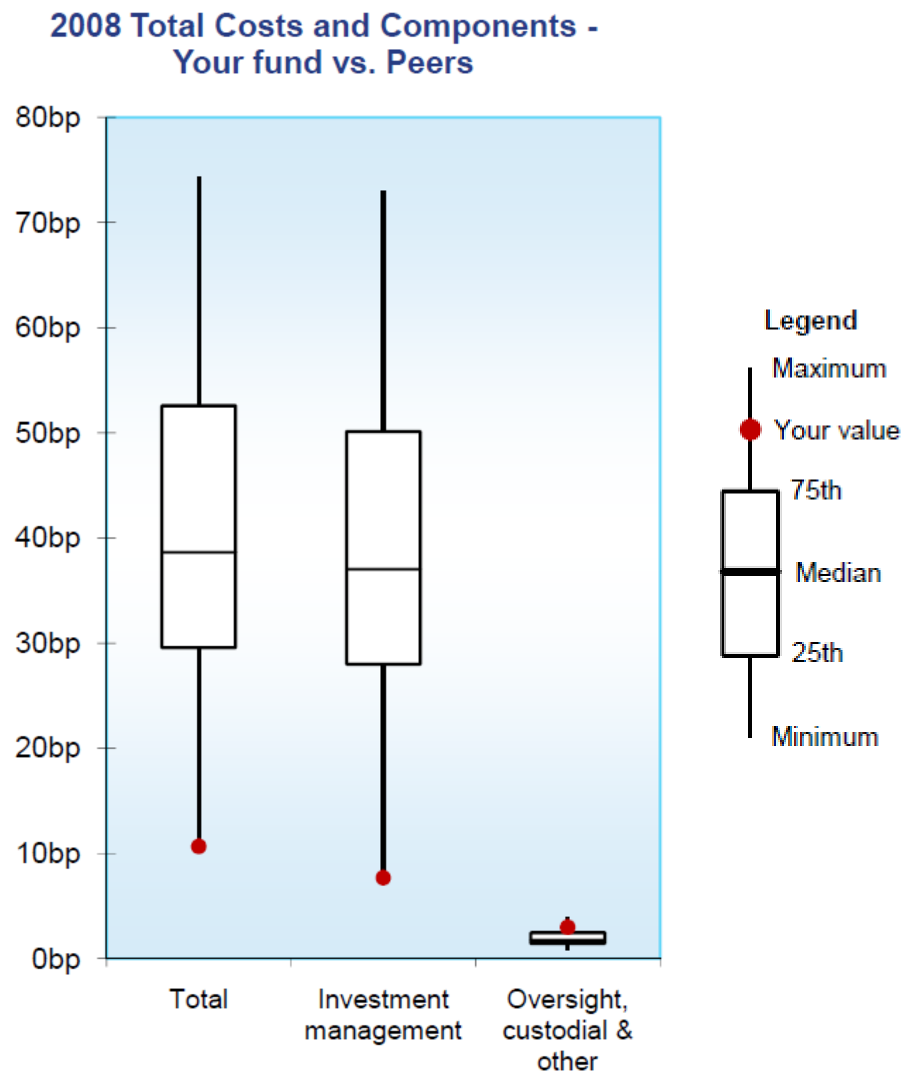
Empirical Evidence on Manager Performance

- Empirical research has limitations
  - Limited research on other asset classes than listed equities
  - Research focused on developed markets, mostly US
  - Data on mutual funds, hedge funds, and private investors - very limited on large institutions

- Empirical evidence shows some fund managers add value
  - The level of fees and costs is critical
    - Security selection better than total return
    - Cash, fees and transactions cost detracts from performance

Fees and Transaction Costs Critical

- NBIM fees and transaction cost are unusually low



Source: CEM Benchmarking Inc.

Are Financial Markets Efficient?

- A good starting point as a hypothesis
  - For the investment strategy discussion
  - For building an investment organisation

- Academic literature has become more nuanced
  - Constraints on financing, risk capacity
  - Investor segmentation
  - Changing and time varying risk factors

- Empirical evidence show some managers add value
  - Most research on mutual funds and developed markets
  - Fees and transactions costs critical

Why Active Management?

Chapter 1.3

The Bigger Picture

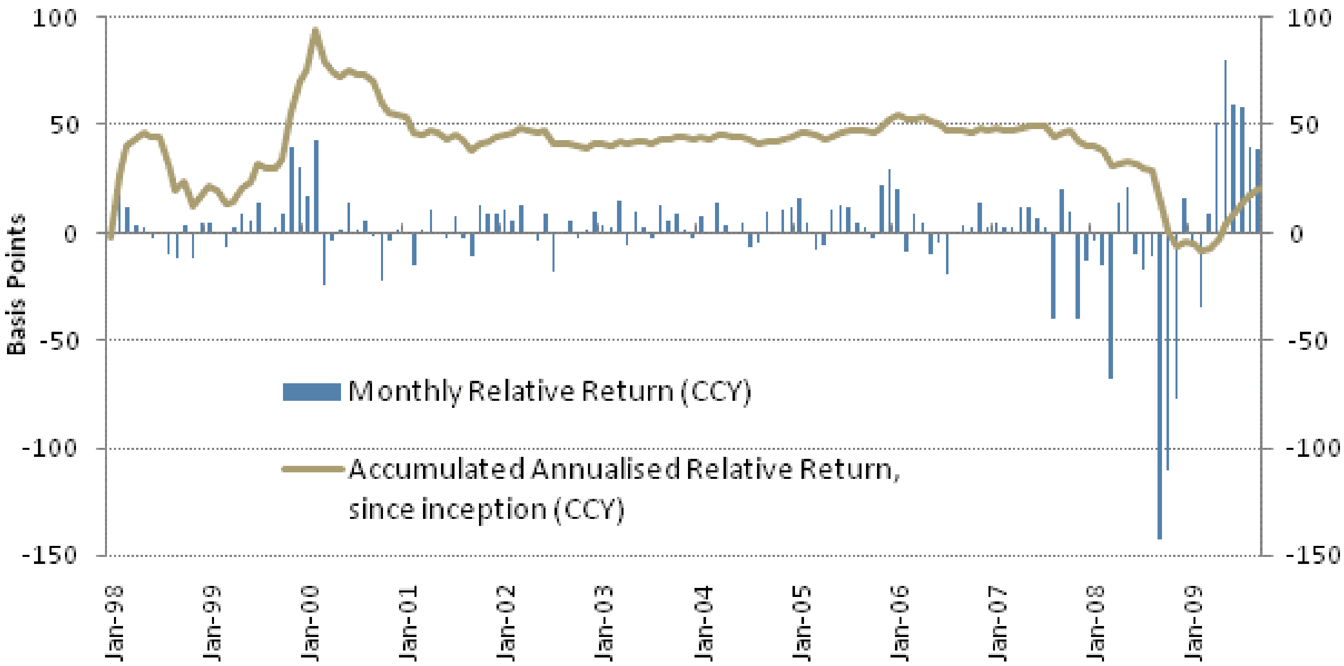
- The benchmark portfolio is not a neutral starting point
- Active management may improve the trade-off between risk and return
- A long-term investor with high risk capacity should exploit time-varying and systematic risk factors
- Strategy must be well communicated, understood and anchored in the control structure

The Three Most Important Active Decisions

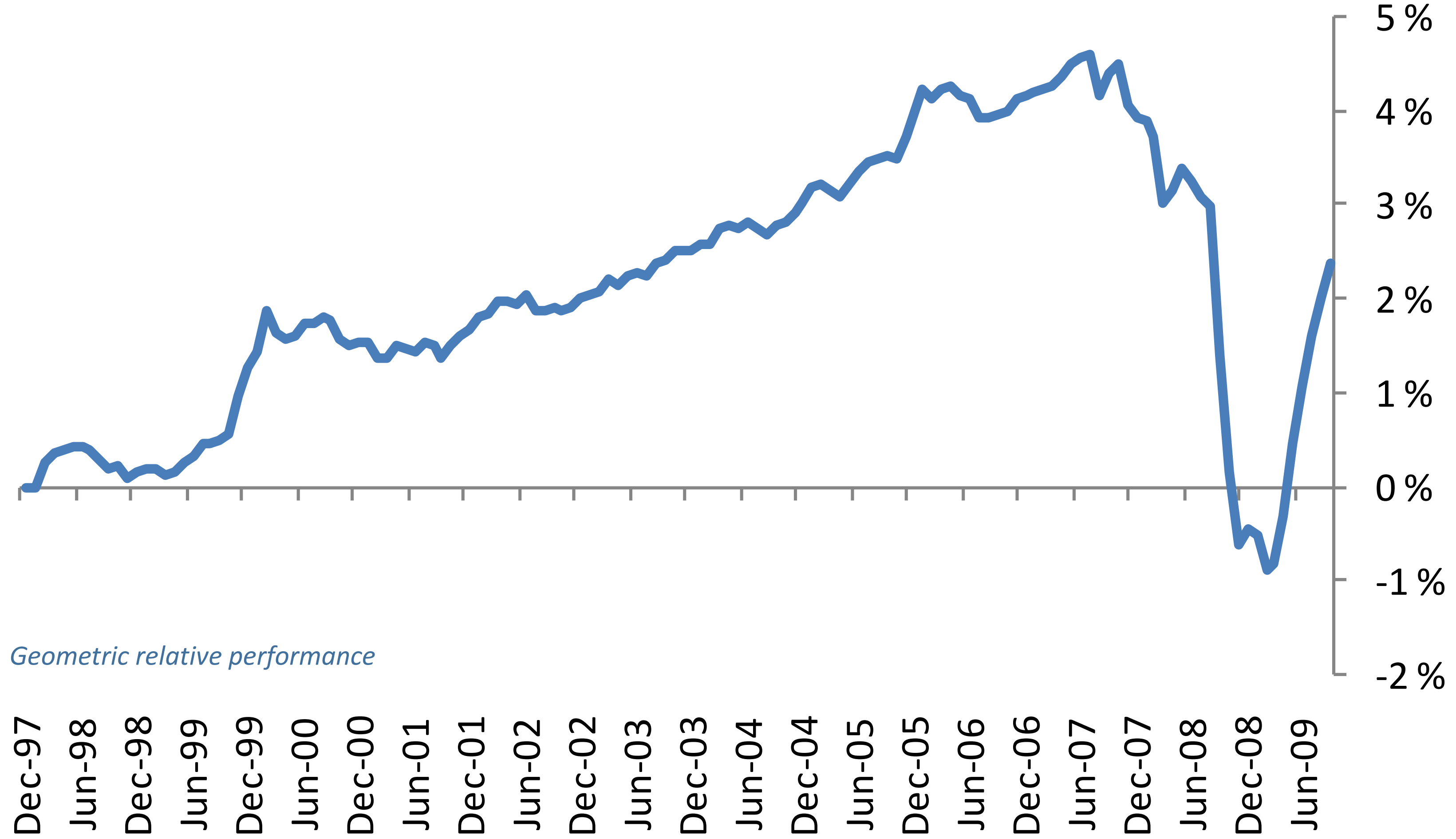
1. The timing of benchmark changes
2. Inflows and timing of moving from cash to financial assets
3. Rebalancing decision when moving back to strategic assets weights

Twelve Years of Return History

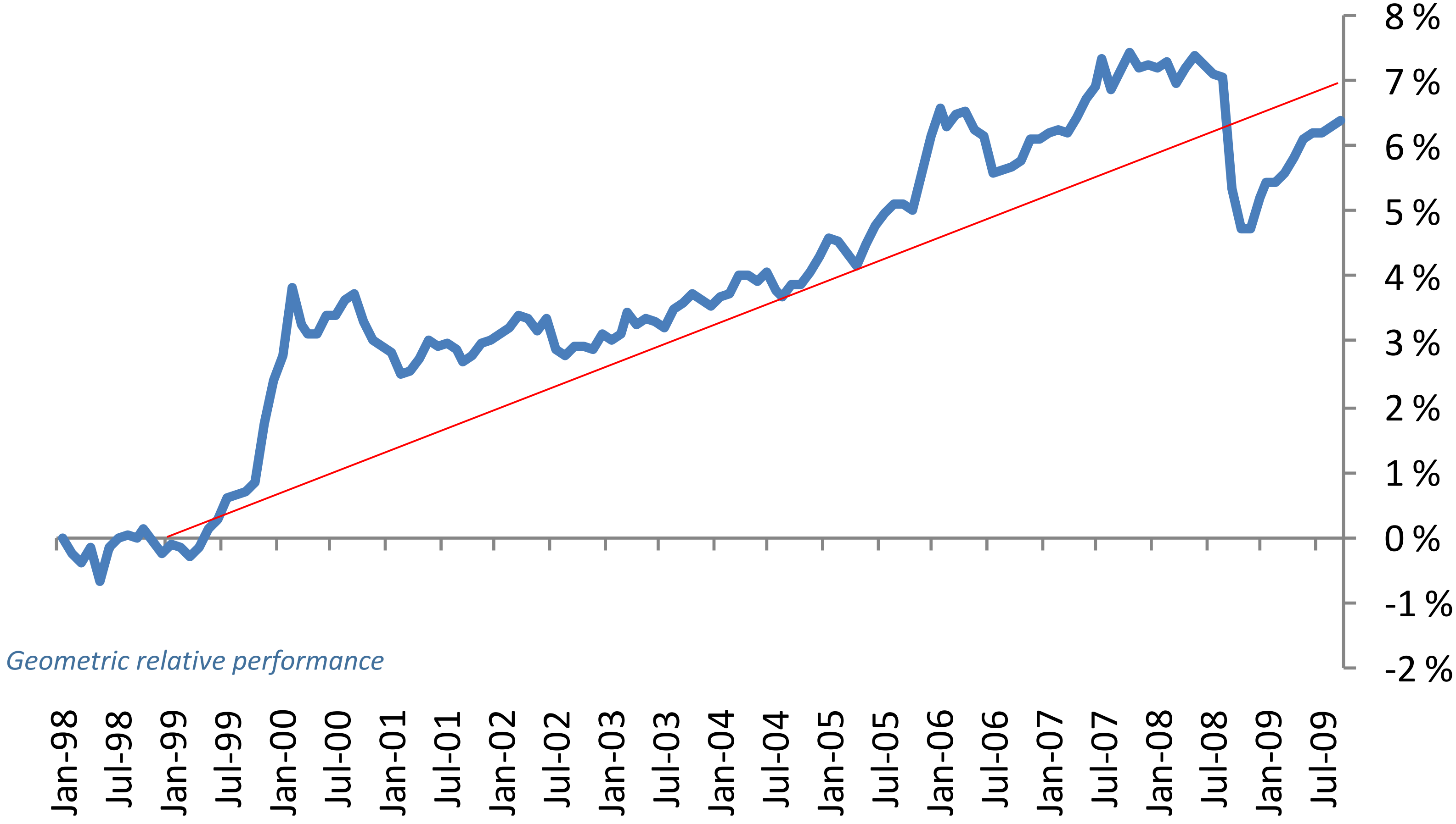
Annualised Excess Return for the Government Pension Fund Global



Accumulated Excess Return for the Government Pension Fund Global

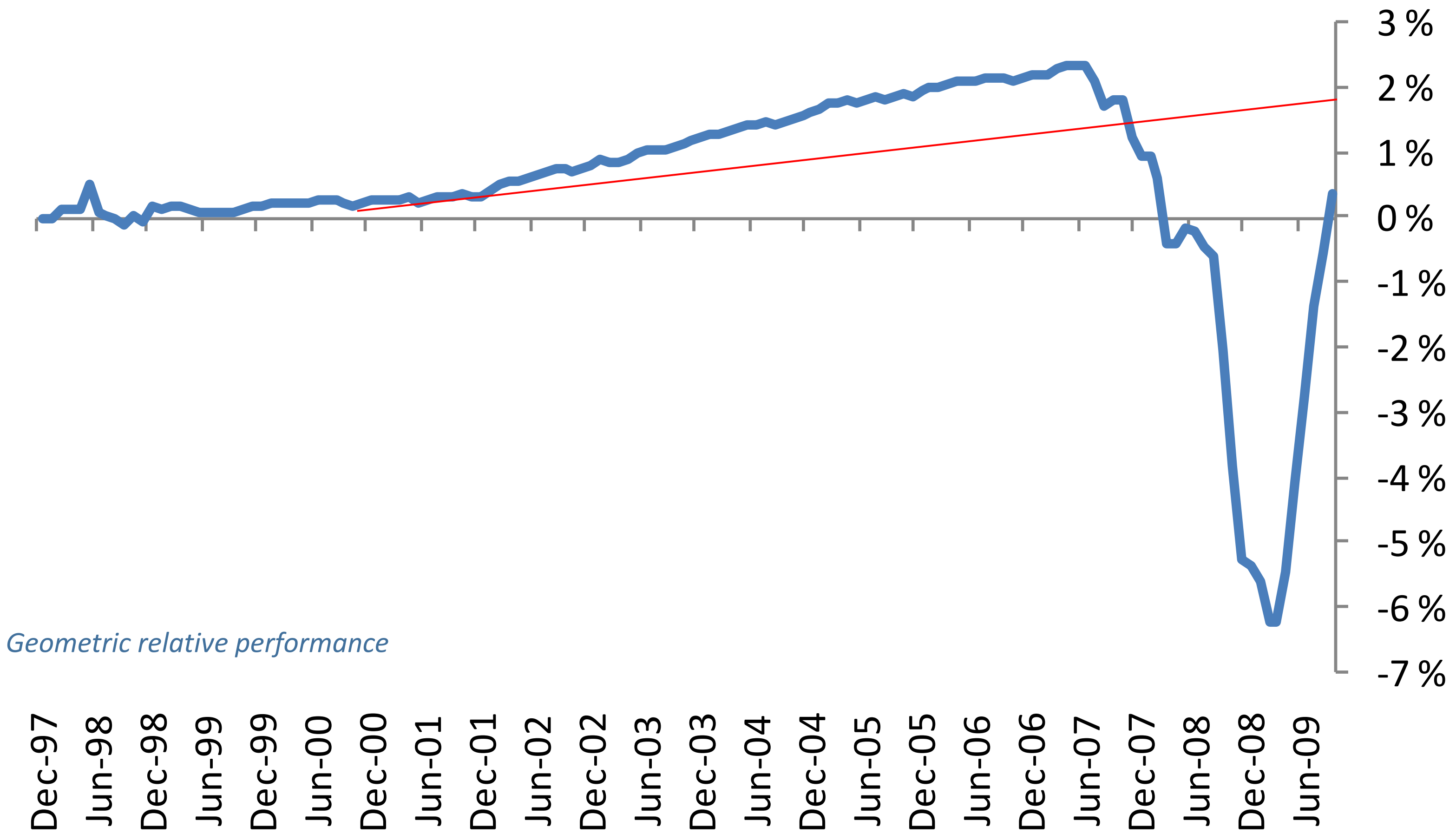


Accumulated Excess Return for the Equity Asset Class



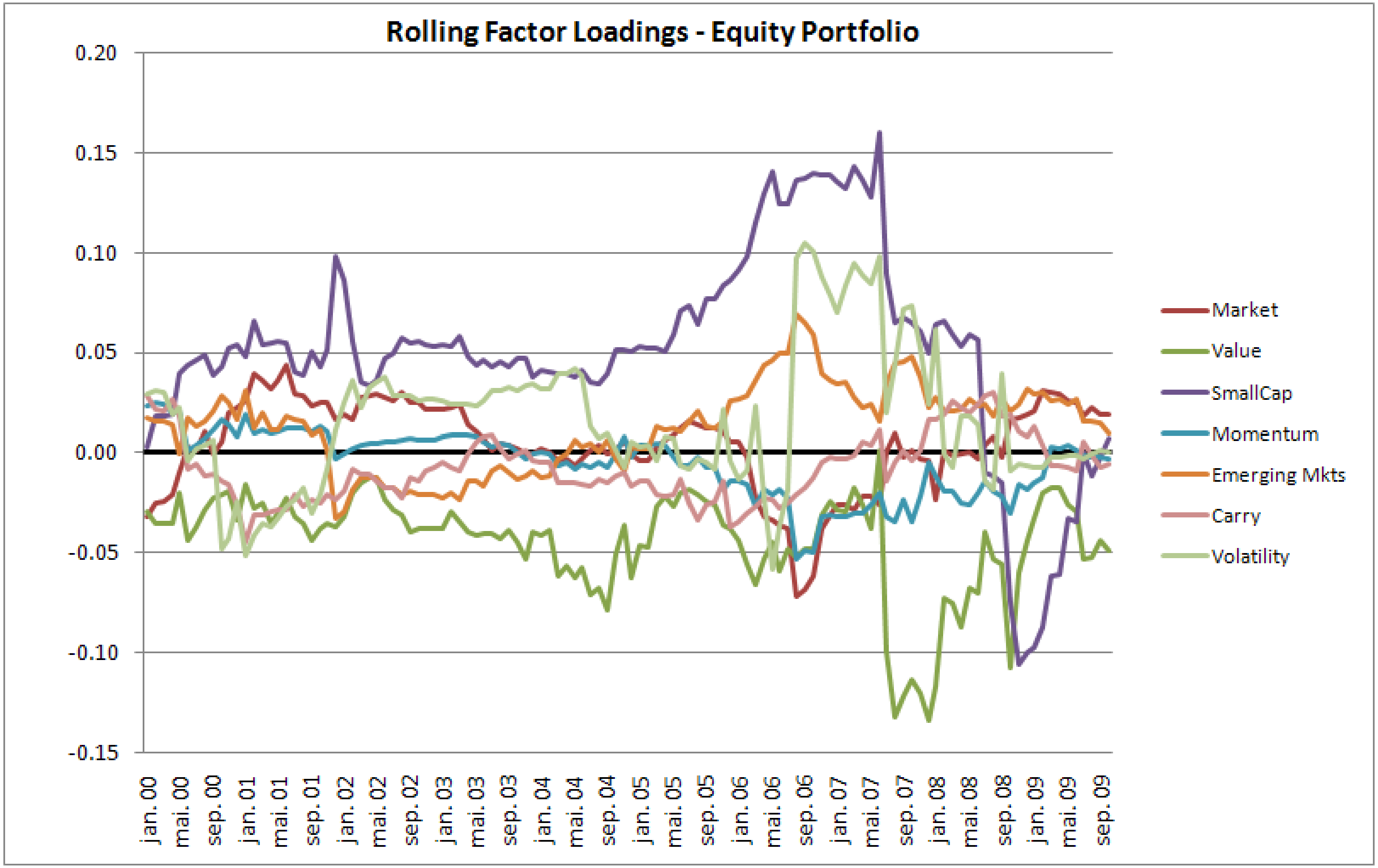
- Active equity management started in 1999

Accumulated Excess Return for the Fixed Income Asset Class



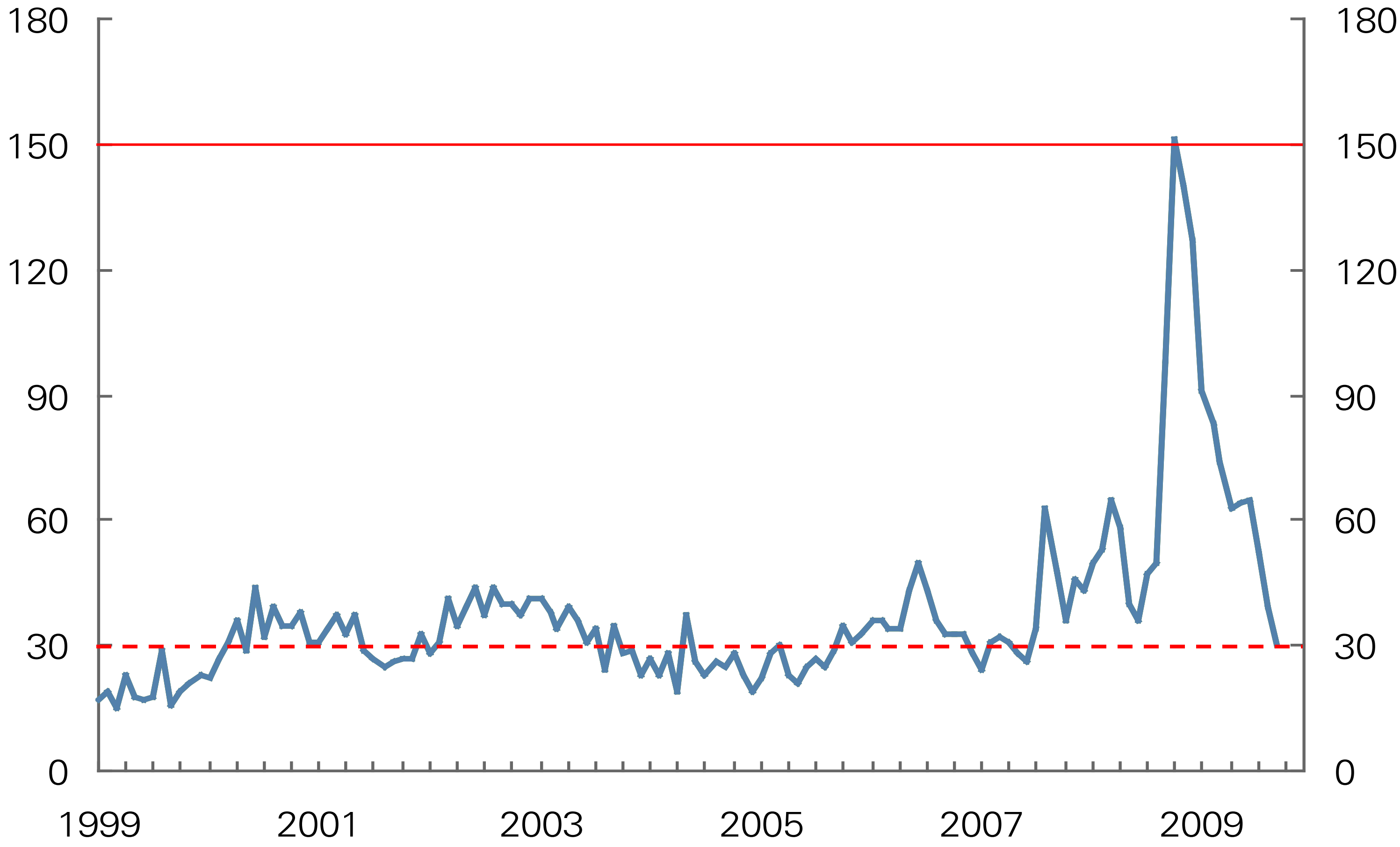
- Active fixed income management started in 2000

Has GPFG Been Harvesting Risk Premia?



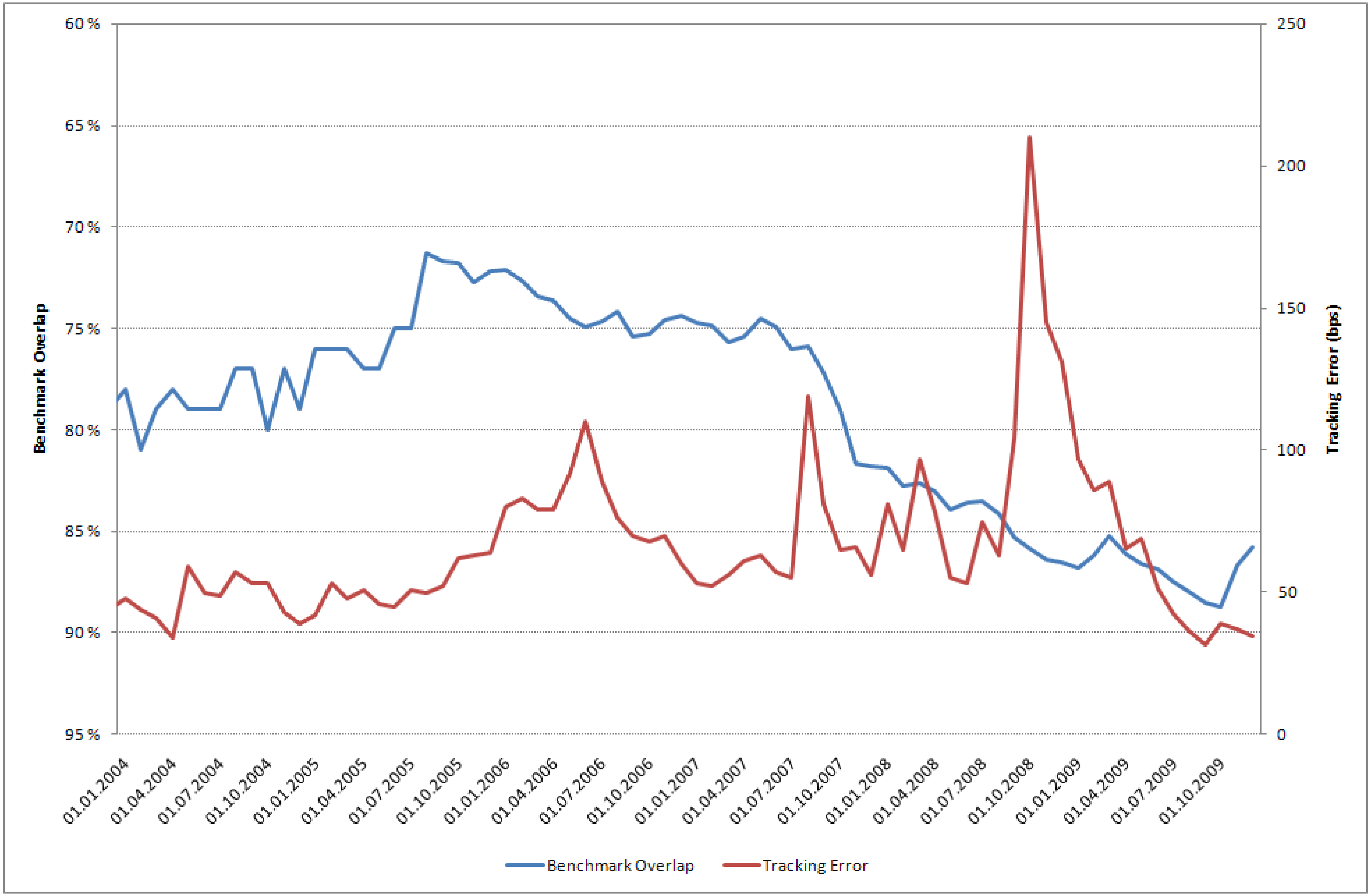
The Risk of Active Management

Expected Relative Volatility

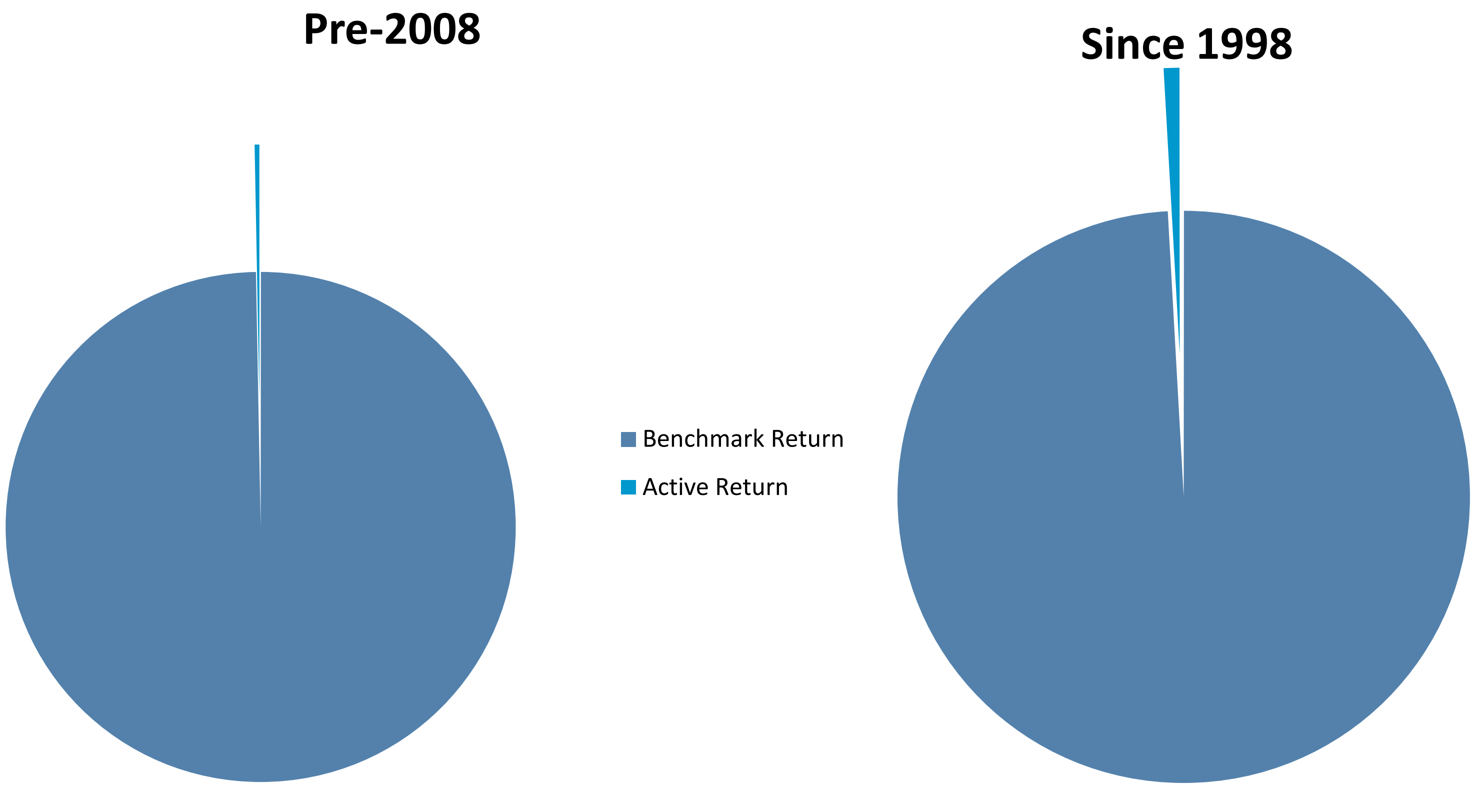


- Active management to date has only used 20% of risk limit.

How Actively Is the Fund Managed?



Did Active Management Increase Risk?



Active Management May Reduce Risk

- Active management regularly reduce investment risk
  - Better grasp on systematic risk
  - Continuous evaluation of the risk-return trade-off
  - Exclusions of segments of benchmark that has unwanted risk
  - Adding financial instruments for risk management

- Active management is risk control
  - Strengthens risk management capabilities
  - Reduces operational risk
  - Improves strategic advice insights
  - Protects our shareholder rights

Why Active Management?

- We believe we can create higher return
  - Founded on academic research
  - Based on competitive advantage
  - Supported by 12 years' return history

- Without increasing the risk of the fund
  - Benchmark choice accounts for 99.7% of risk
  - The benchmark is not risk neutral or optimal at any time

- Through building financial competence
  - Insight in the investment is the best risk management
  - Active management also reduces operational risk

Which Type of Active Management?

Chapter 2

Academic Research on Successful Managers

- Governance structure
  - Alignment of interest

- Organisation
  - Scale
  - Delegation
  - Human capital

- Management structure
  - Specialisation
  - Analytical capacity
  - Independent ideas
  - Concentrated portfolios

- Incentive structure
  - Alignment of risk

Features of Successful Active Management

- Organisation
  - Delegation of decision making authority
  - High quality human capital and financial competence
  - Appropriate incentive structure
- Approach to asset management
  - Specialisation and diversified mandate structure
  - Emphasis on internal analytical capacity
  - Focus on investment idea generation
  - Concentrated investment positions in numerous mandates

The Active Management Strategy

Chapter 2.1

Defining Characteristics of the Fund

Alignment of interest

Long-term horizon

Size

NBIM's Characteristics

- Long term
  - Time to return realisation
  - Stressed markets
  - Risk-return trade-off
- Size
  - Economies of scale
  - Targeted strategies
  - Terms and customisation
- Organisation
  - Specialisation
  - Delegation
  - Diversification
  - Concentration

Active Management in NBIM

- A large, long-term investor
  - Holding and taking positions through turbulent markets
  - Emphasis on high conviction investment positions
  - Economies of scale in information gathering and analysis
  - Targeted and customised strategies in defined universe

- Management Structure
  - Focus on internally driven, bottom-up research
  - Delegated portfolio structure with clear mandates
  - Independent research and expert knowledge in narrow segments
  - Investing through concentrated portfolios

Three Main Active Strategies

Chapter 2.2 – 2.4

Three Main Strategies for Active Management

Ensure efficient market exposure

Create value through fundamental analysis

Management of systematic risk

Alternative Return Sources

- Relative value strategies
- Fundamental strategies
- Factor-based positions
- Tactical allocation

From NBIM's Annual report 2003:

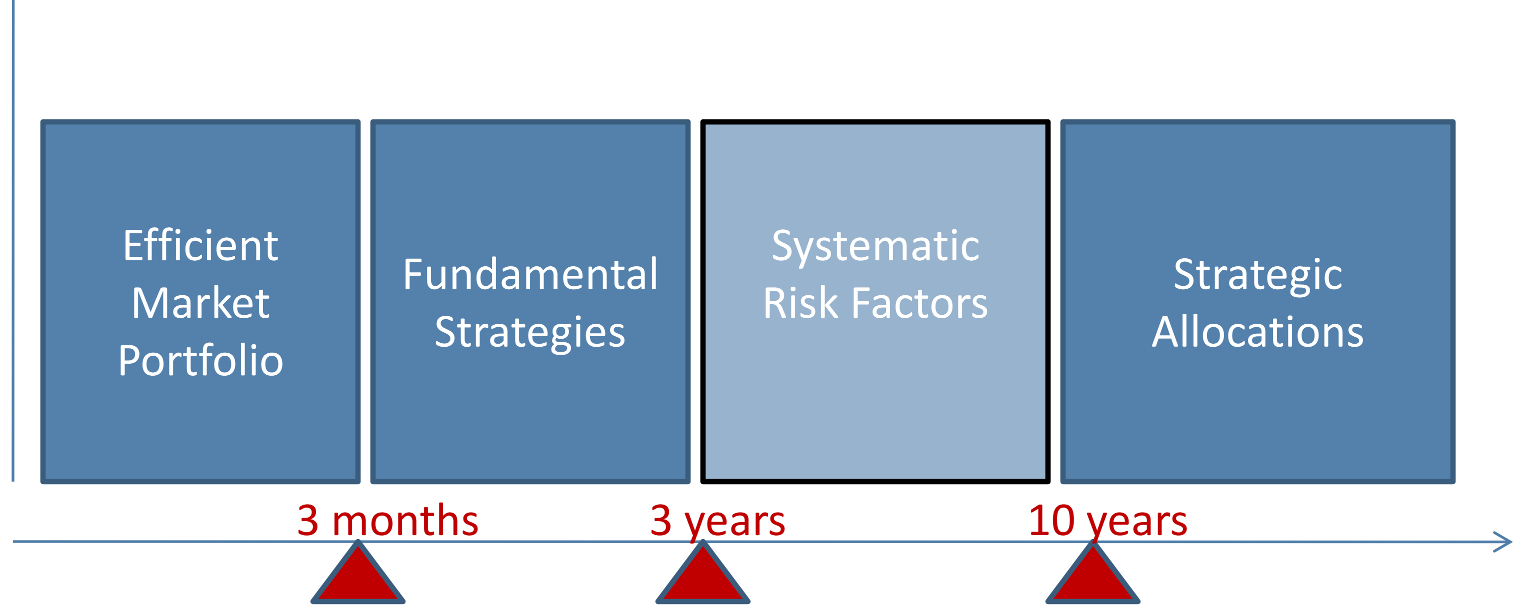
Management strategy	Relative value	Fundamental strategies	Factor-based strategies	Tactical allocation
Analytical ability	+++	++	+	+
Number of independent positions	++	+++	-	-
Implementation costs	+	++	+	+++
Experience	+++	++		-
Expenses	High	High	Moderate	Low
Expected information ratio	High	High	Moderate	Low

The Question Asked by AGS

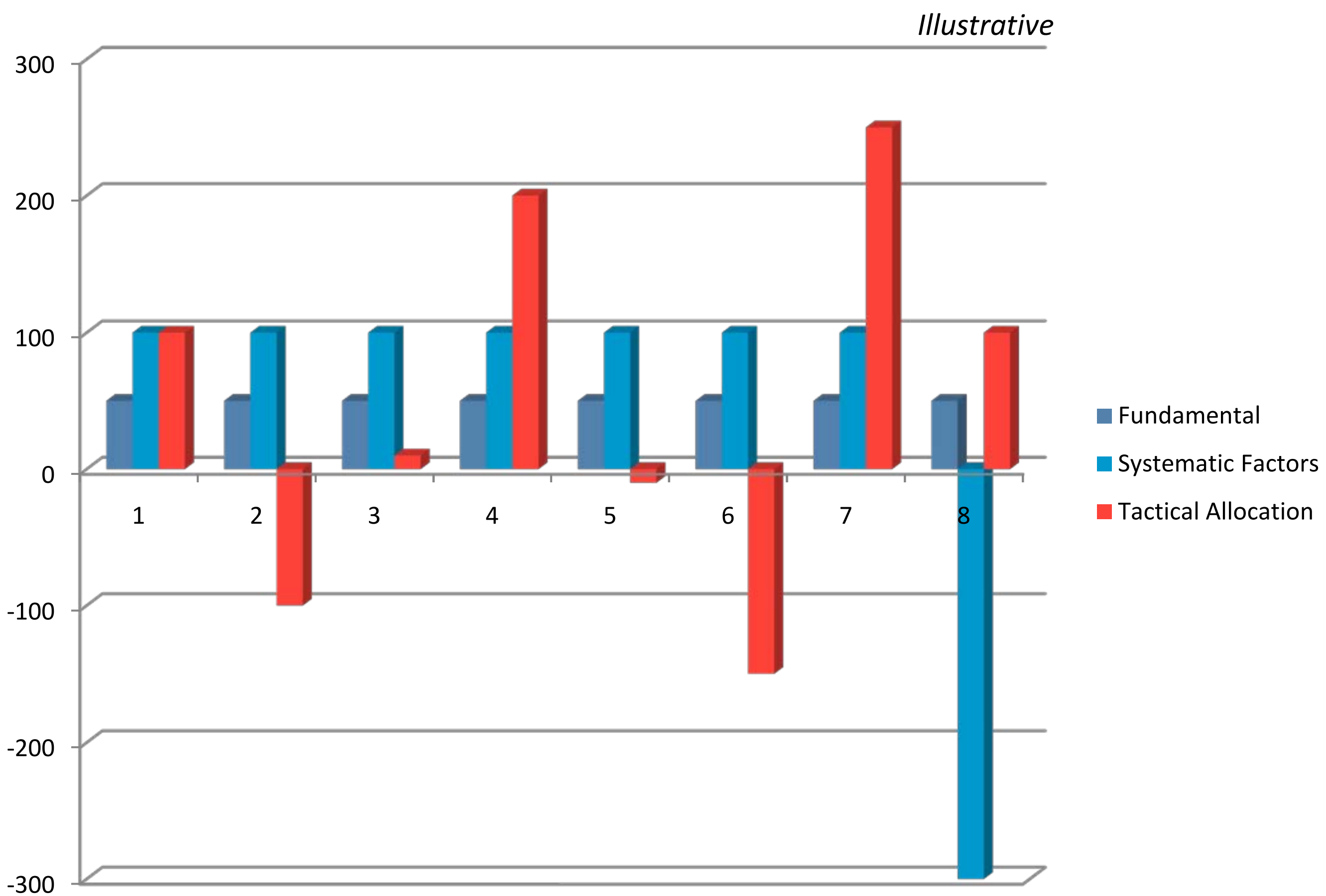
- Are we missing out on clear investment opportunities?

$$(1)\ \textit{Excess return from active management} = \alpha + \sum_{n}^{i=1} \beta_i\ F^{REF} + \sum_{n}^{j=1} \beta_j\ F^{NOREF} + \beta\ BM - TC$$

α = Risk-adjusted excess return
β = Exposure to systematic risk factors
F^{REF} = Return on risk factors represented in benchmark portfolio
F^{NOREF} = Return on risk factors not represented in benchmark portfolio
BM = Return on benchmark portfolio
TC = Transaction costs



Return Series of Different Strategies



- The Owners' Return Preferences A Key Question

Which Type of Active Management?

- We are basing our strategies on being a large, long-term investor

- We are continuing our long-term investment philosophy based on:
  - Specialisation
  - Delegation
  - Diversification

- With three pillars of active management
  - Efficient market exposure
  - Fundamental research
  - Systematic risk management

Managing Systematic Risk

A Comment

Systematic Risk Factors

- An increasing number of anomalies identified
- Varies over time and between markets
- New anomalies likely to emerge
- Our understanding of financial markets change rapidly

Systematic Risk Exposures in GPFG

	Equity portfolio		Fixed income portfolio	
	Coefficient	T-value[1)]	Coefficient	T-value[1)]
Alpha	0.0288	1.45	-0.0081	-0.44
MKT	0.0152	2.61	-0.0015	-0.04
VAL	-0.0373	-4.14		
SML	0.0367	3.93		
UMD	0.0067	2.02		
EMG	0.0073	1.03		
CR1			0.0588	2.80
CR2			-0.0025	-0.10
CR3			0.0003	0.11
ILL	0.0659	0.73	0.3997	4.82
CRY	-0.0032	-0.42	0.0150	1.66
VOL	0.0056	1.10	0.0173	2.19
Adj R^2	**42.0%**		**62.2%**	

Estimation results. February 1998 to October 2009

1) Based on heteroskedasticity-consistent standard errors.

Measuring Factor Exposure

Estimation results. Feb 1998 - May 2007

	Equity portfolio		Fixed income	
	Coefficient	T-value[1)]	Coefficient	T-value[1)]
Alpha	0.0336	1.64	0.0233	4.54
MKT	0.0114	1.70	-0.0068	-1.09
VAL	-0.0346	-3.45		
SML	0.0428	4.07		
UMD	0.0077	2.39		
EMG	0.0051	0.81		
CR1			0.0090	0.77
CR2			-0.0067	-1.33
CR3			0.0001	0.16
ILL	-0.2237	-2.56	-0.0144	-0.71
CRY	-0.0103	-1.29	0.0009	0.29
VOL	0.0133	1.43	0.0004	0.10
Adj R^2	45.60 %		2.10 %	

1) Based on heteroskedasticity-consistent standard errors.

Estimation results. February 1998 - October 2009

	Equity portfolio		Fixed income	
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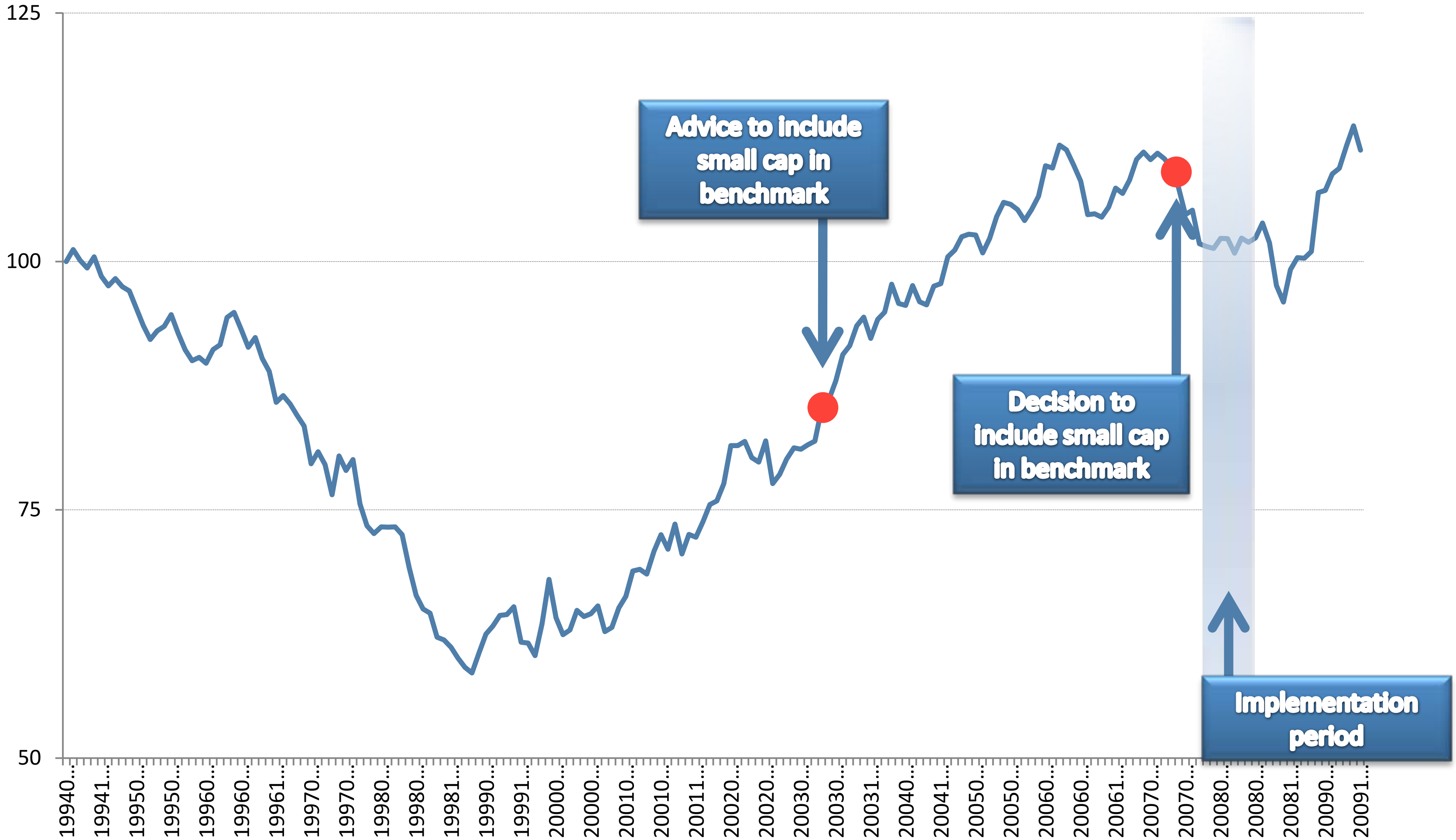
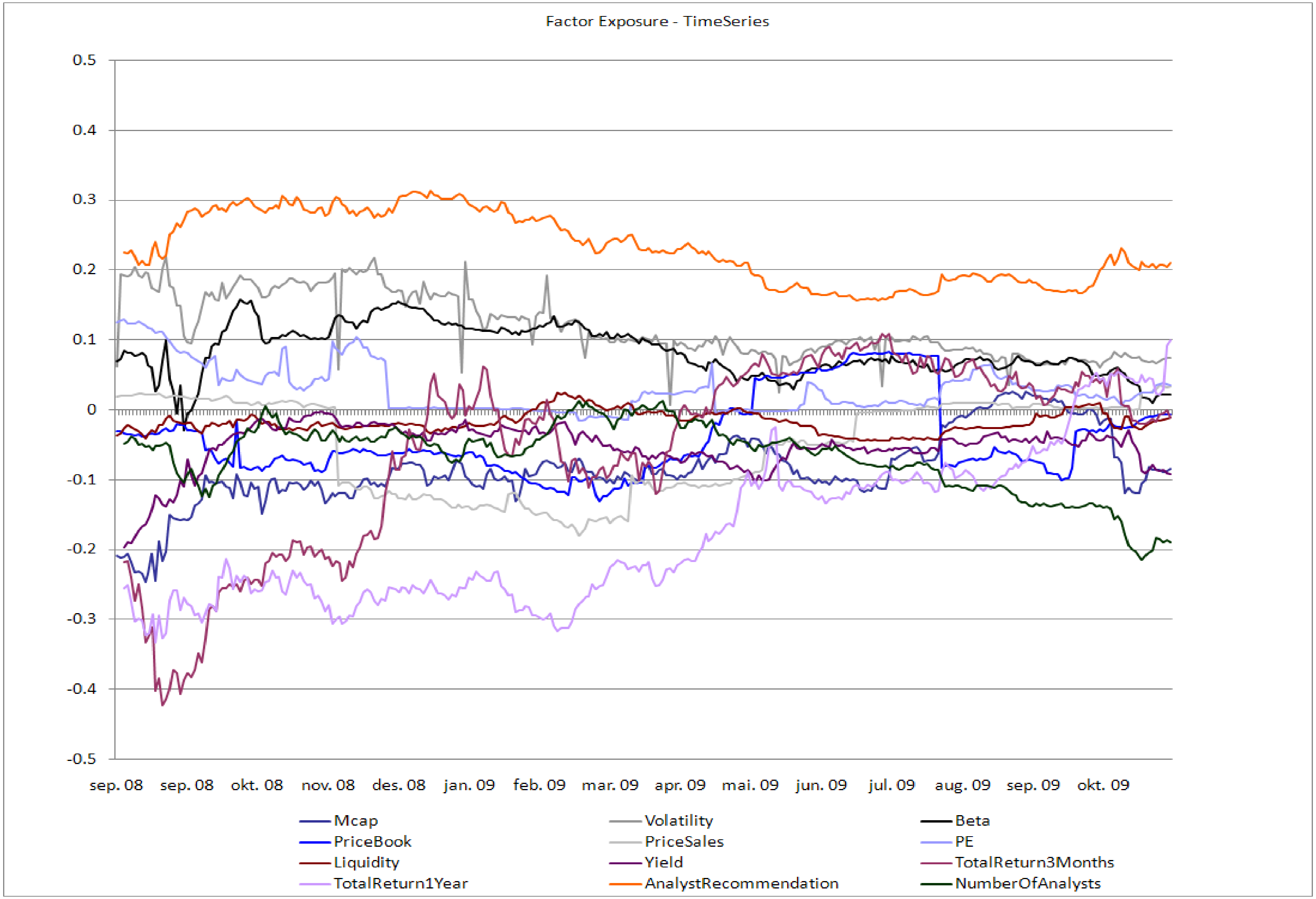
VOL	0.0056	1.10	0.0173	2.19
Adj R^2	42.00 %		62.20 %	

1) Based on heteroskedasticity-consistent standard errors

Systematic Risk – Not a One Way Bet



Systematic Risk – Not Stable Over Time



Conclusion

The Questions Asked

- Are Markets Efficient?
- Why Active Management?
- Which Type of Active Management?

The First Question Asked

- Are Markets Efficient (or Just Hard to Beat)?
  - A good starting point
  - Academic literature is today more nuanced
  - Empirical evidence shows some managers outperform

An explicit goal of achieving the highest possible return is necessary to ensure the best possible quality in all aspects of the management task.

The Second Question Asked

- Why Active Management?
  - We believe we can create higher return
  - and improve the risk-return of the fund
  - by building competence and exploiting the fund characteristics

An organisation that aims to be average will achieve mediocrity.

The Third Question Asked

- Which Type of Active Management?
  - We are basing our strategies on being a large, long-term investor
  - Ensuring an efficient market exposure, complemented by fundamental research, and systematic risk management
  - All strategies are founded on our financial market insights

NBIM's mission is to safeguard and build financial wealth for future generations.

Overall Summary

- Twelve years experience of managing the fund suggests that active management could make an important contribution to the return of the fund in the long term.

- We believe we can improve the risk-return characteristics of the fund through active management.

- Norges Bank can not recommend a passive investment strategy which does not seek to achieve cost-efficient market exposure, insight in the underlying assets in which we are invested, or an understanding of the overall risk of our investments.

NBIM Norges Bank Investment Management