



# RISK MANAGEMENT IN PENSION FUNDS SCHEMES

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# AGENDA

- \ Your Members and Appropriate Objectives
- \ Blending and Diversification
- \ Transparency and Accountability
- \ Tools and Technologies to manage Risk

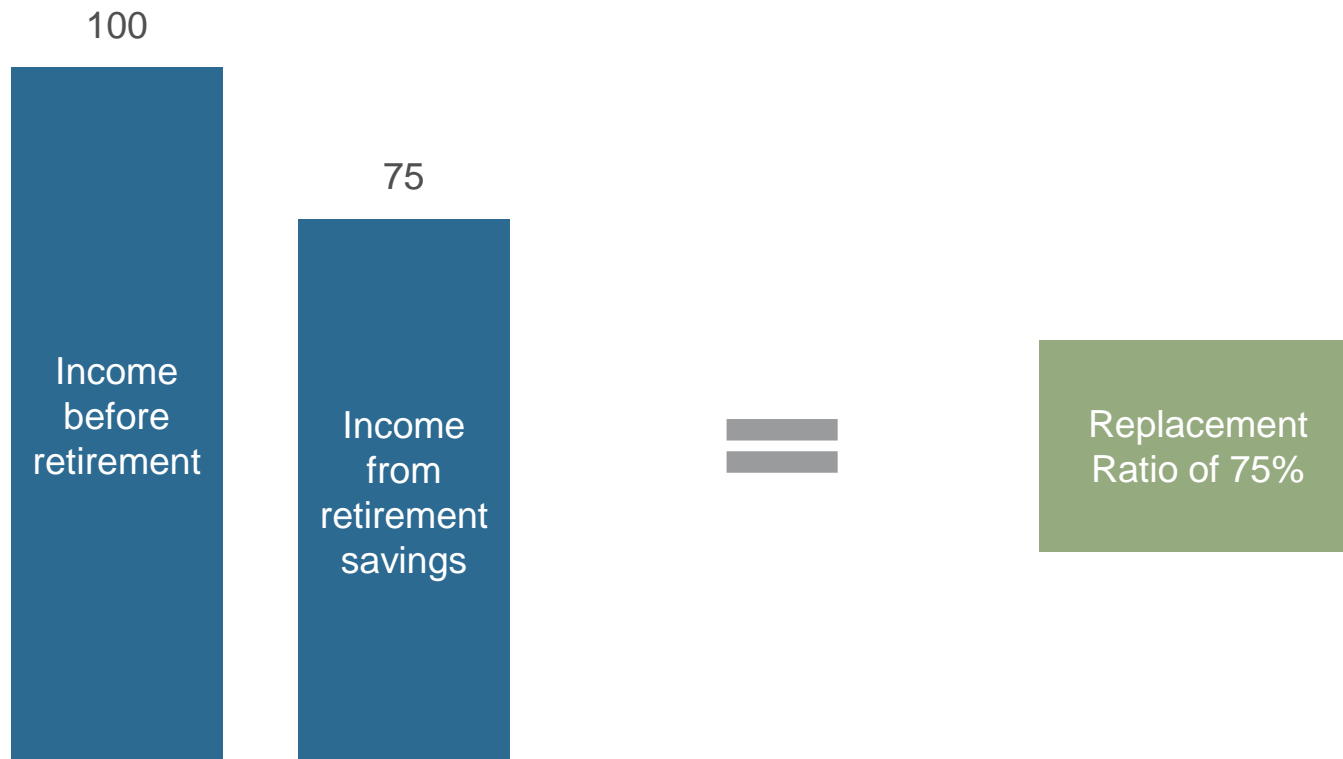


RISK = NOT MEETING OBJECTIVES AND EXPECTATIONS

# UNDERSTANDING YOUR MEMBERS

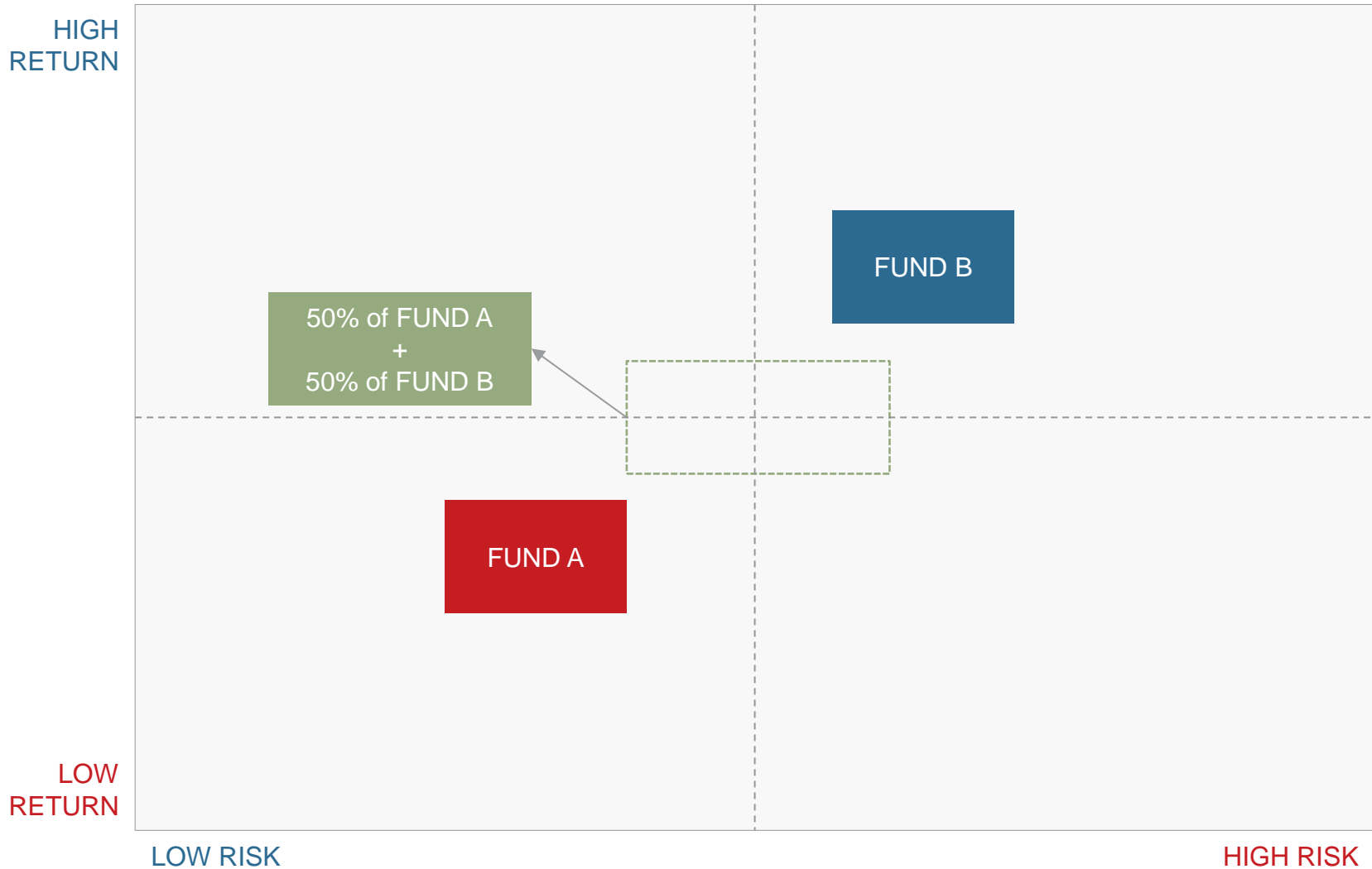
- \ Understand your members
  - Fund administrator data
  - Focus Groups
- \ Replacement Ratio Analysis
- \ Set Real Return Objectives
- \ Set Investment Strategy

# REPLACEMENT RATIO



# MEMBER ANALYSIS EXAMPLE

# BLENDING & DIVERSIFICATION



# DIVERSIFICATION CONSIDERATIONS

## \ Correlations

## \ Consistency in Returns

- Danger of Cumulative Charts
- Rolling Returns

## \ Capture Ratios

## \ How do investment styles differ?

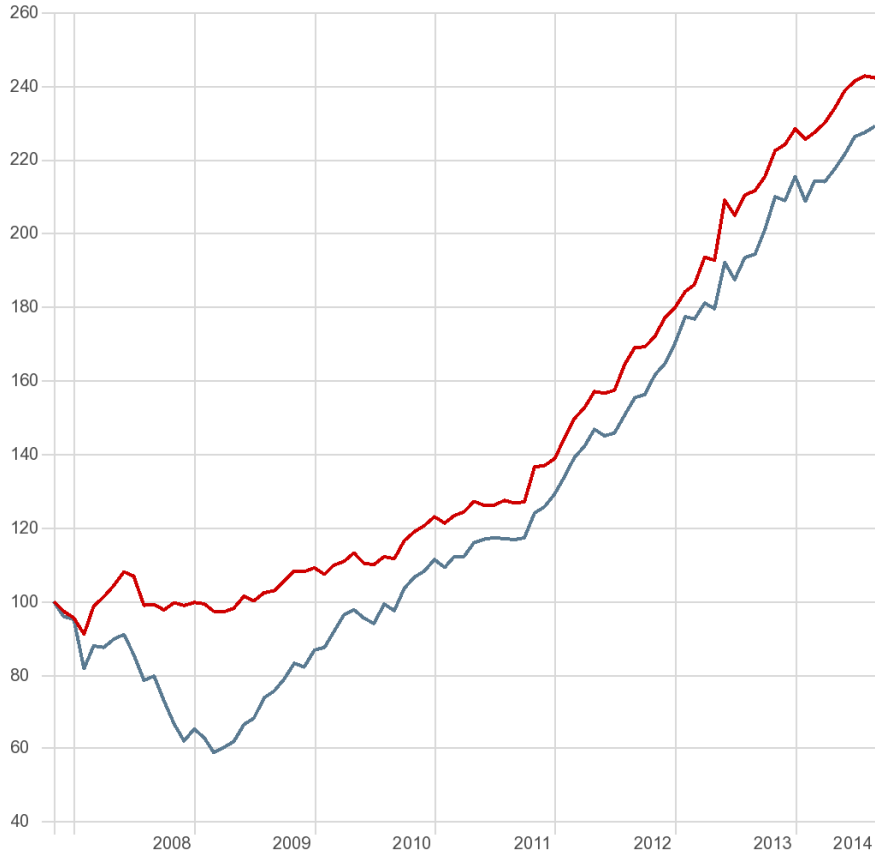


# DIVERSIFICATION BENEFITS THROUGH LOW CORRELATION

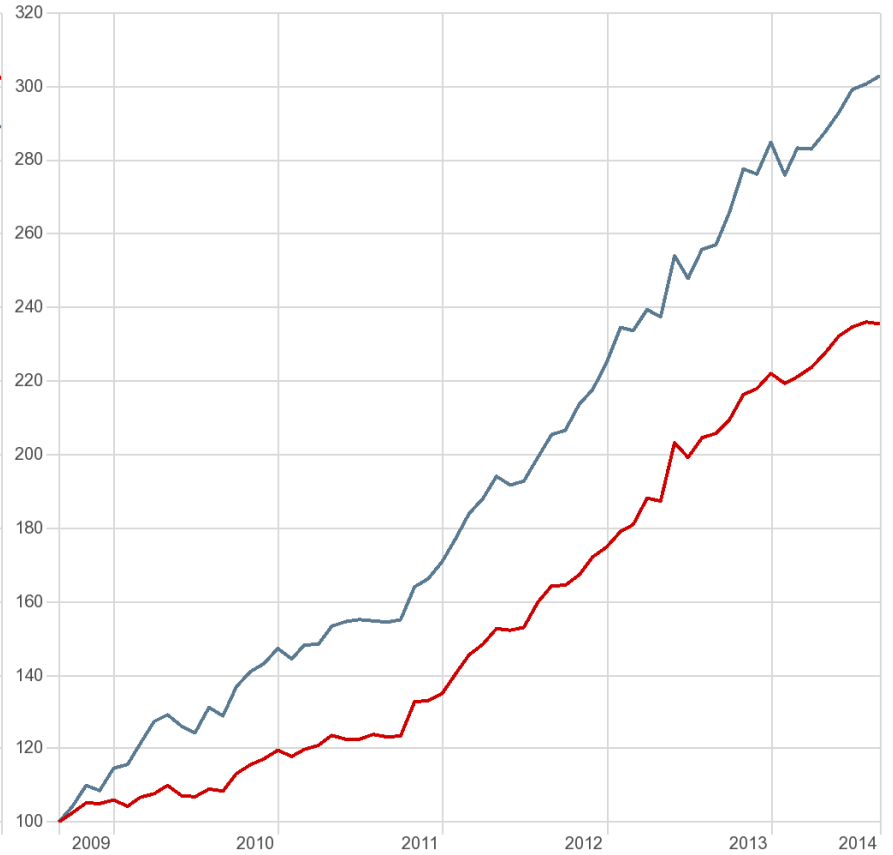
CORRELATIONS	FUND A	FUND B	FUND C	FUND D	FUND E	FUND F	FUND G	FUND H	FUND I	FUND J
FUND A		0.59	0.63	0.66	0.62	0.60	0.64	0.64	0.54	0.55
FUND B	0.59		0.80	0.78	0.86	0.76	0.79	0.81	0.65	0.68
FUND C	0.63	0.80		0.87	0.82	0.88	0.86	0.91	0.65	0.67
FUND D	0.66	0.78	0.87		0.80	0.87	0.89	0.89	0.65	0.68
FUND E	0.62	0.86	0.82	0.80		0.80	0.82	0.83	0.68	0.71
FUND F	0.60	0.76	0.88	0.87	0.80		0.89	0.92	0.69	0.72
FUND G	0.64	0.79	0.86	0.89	0.82	0.89		0.94	0.70	0.73
FUND H	0.64	0.81	0.91	0.89	0.83	0.92	0.94		0.70	0.73
FUND I	0.54	0.65	0.65	0.65	0.68	0.69	0.70	0.70		0.97
FUND J	0.55	0.68	0.67	0.68	0.71	0.72	0.73	0.73	0.97	

# DANGER OF CUMULATIVE RETURNS

LAST 7 YEARS



LAST 5 YEARS



-Fund A

-Fund C

-Fund A

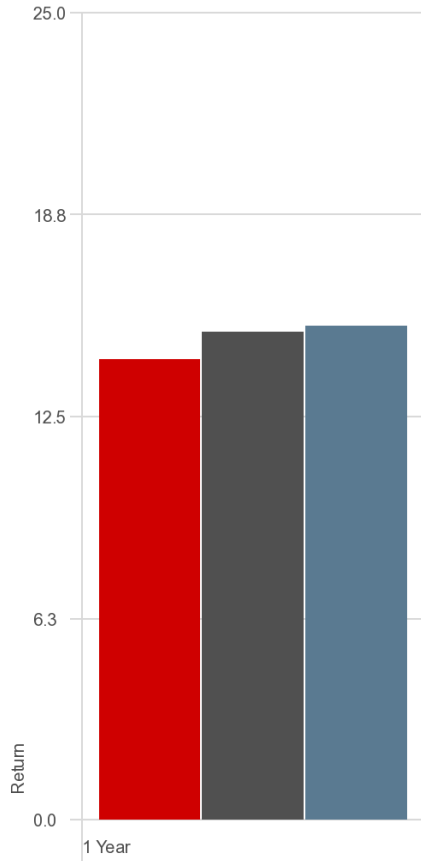
-Fund C

Source: Morningstar

# CONSIDER ROLLING RETURNS

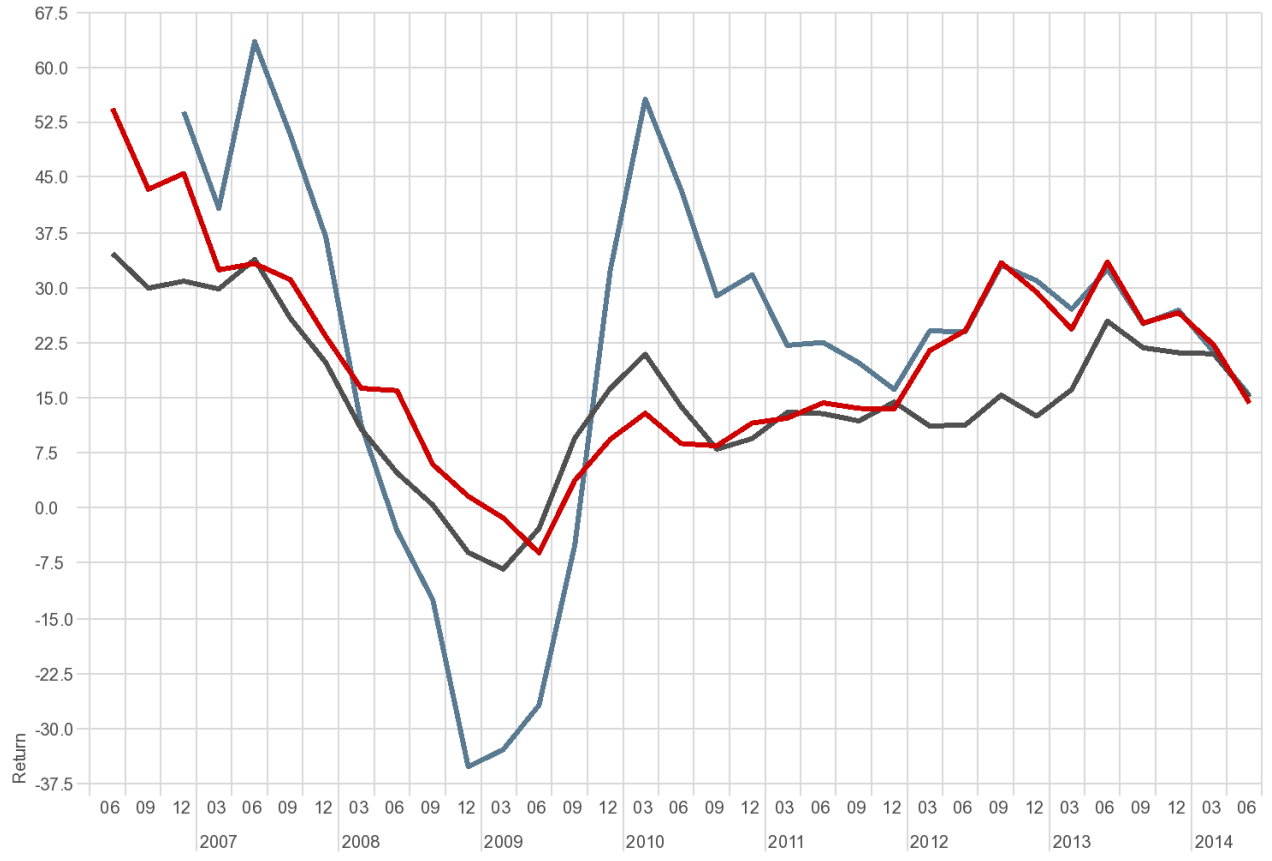
## 1 YEAR RETURNS

As of Date: 2014/05/31



## ROLLING 1 YEAR RETURNS

Time Period: 2005/06/01 to 2014/05/31



■ Fund A   ■ Fund B   ■ Fund C

— Fund A   — Fund B   — Fund C

Source: Morningstar

# CAPTURE RATIOS?

## UPSIDE CAPTURE RATIO

Upside Capture Ratio measures a manager's performance in up markets relative to the market itself.

## DOWNSIDE CAPTURE RATIO

Downside Capture Ratio measures manager's performance in down markets.

In essence, it tells you what percentage of the down/up-market was captured by the manager. For example, if the ratio is 110%, the manager has captured 110% of the down/up-market.

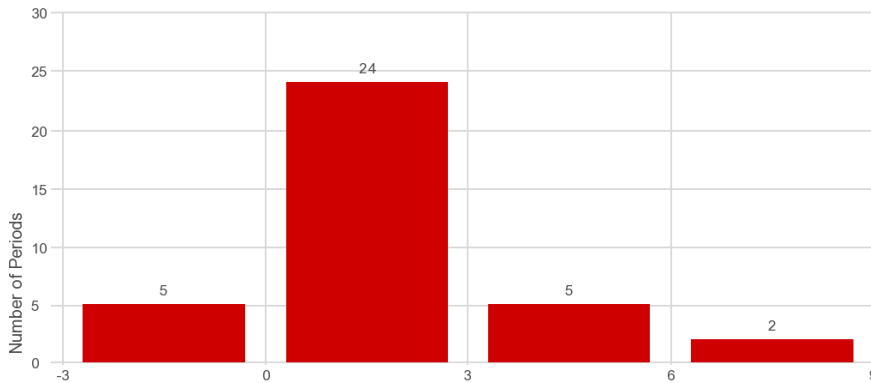
# CAPTURE RATIOS

Time Period: 2011/01/01 to 2013/12/31

	Std Dev	Up Capture Ratio	Down Capture Ratio
Fund A	7.6	80.4	-3.1
Fund B	6.7	59.1	-0.1
The Market	11.5	100.0	100.0

## Return Distribution - Fund A

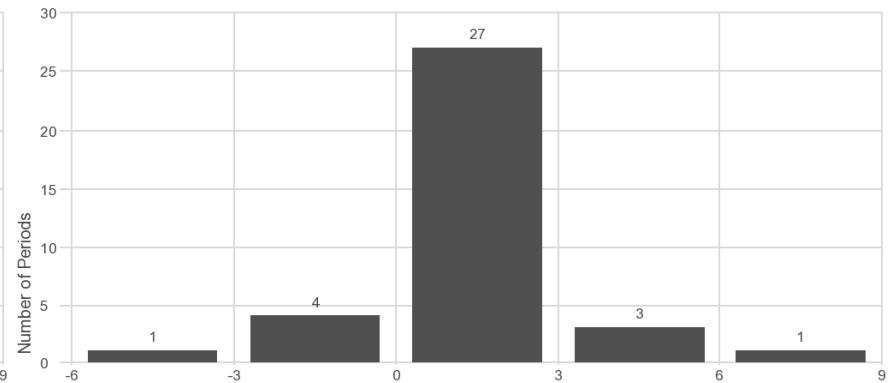
Time Period: 2011/09/01 to 2014/08/31



■ Fund A

## Return Distribution - Fund B

Time Period: 2011/09/01 to 2014/08/31

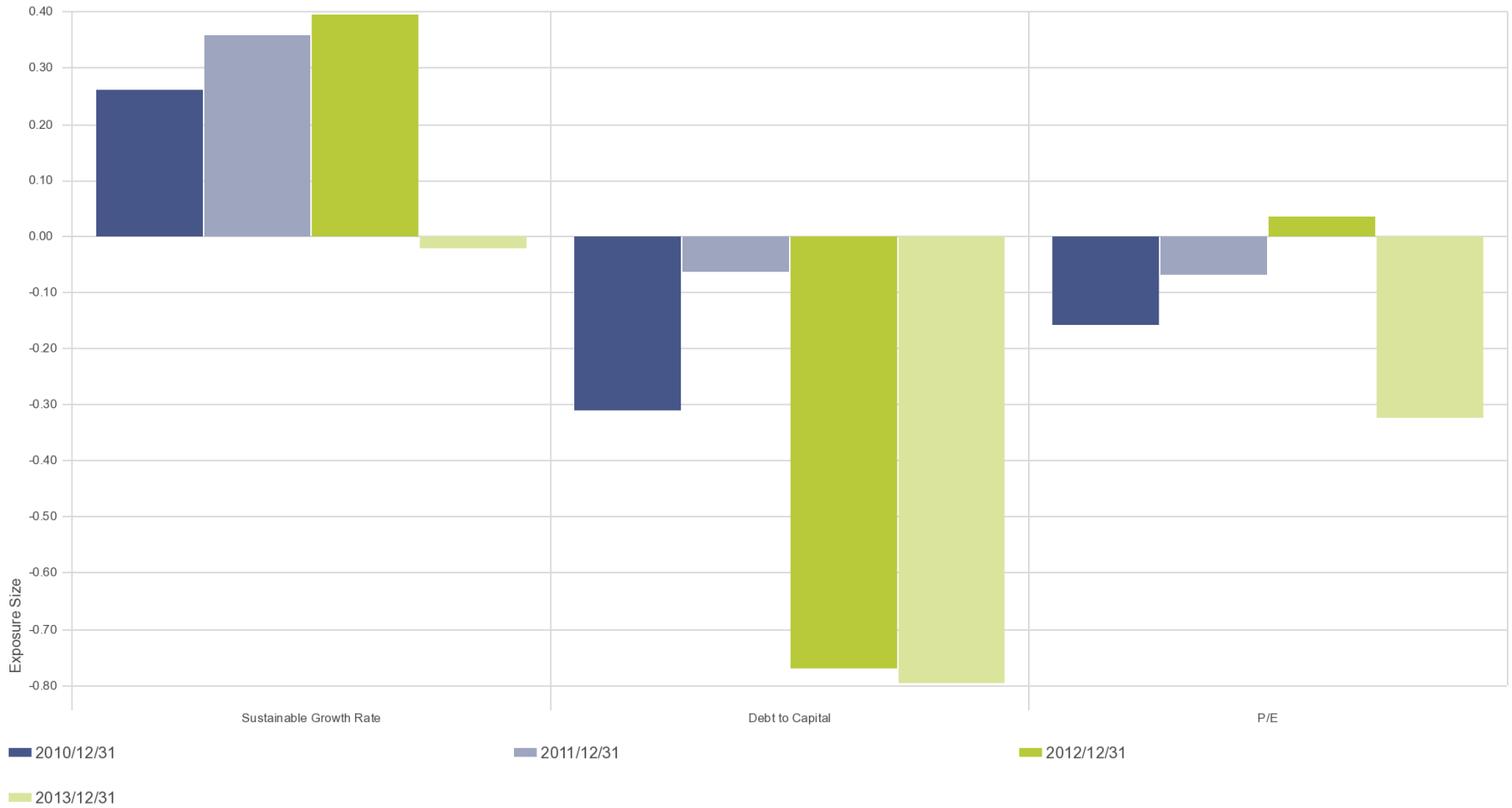


■ Fund B

Source: Morningstar

# FUNDAMENTALS CONSISTENT WITH INVESTMENT PHILOSOPHY

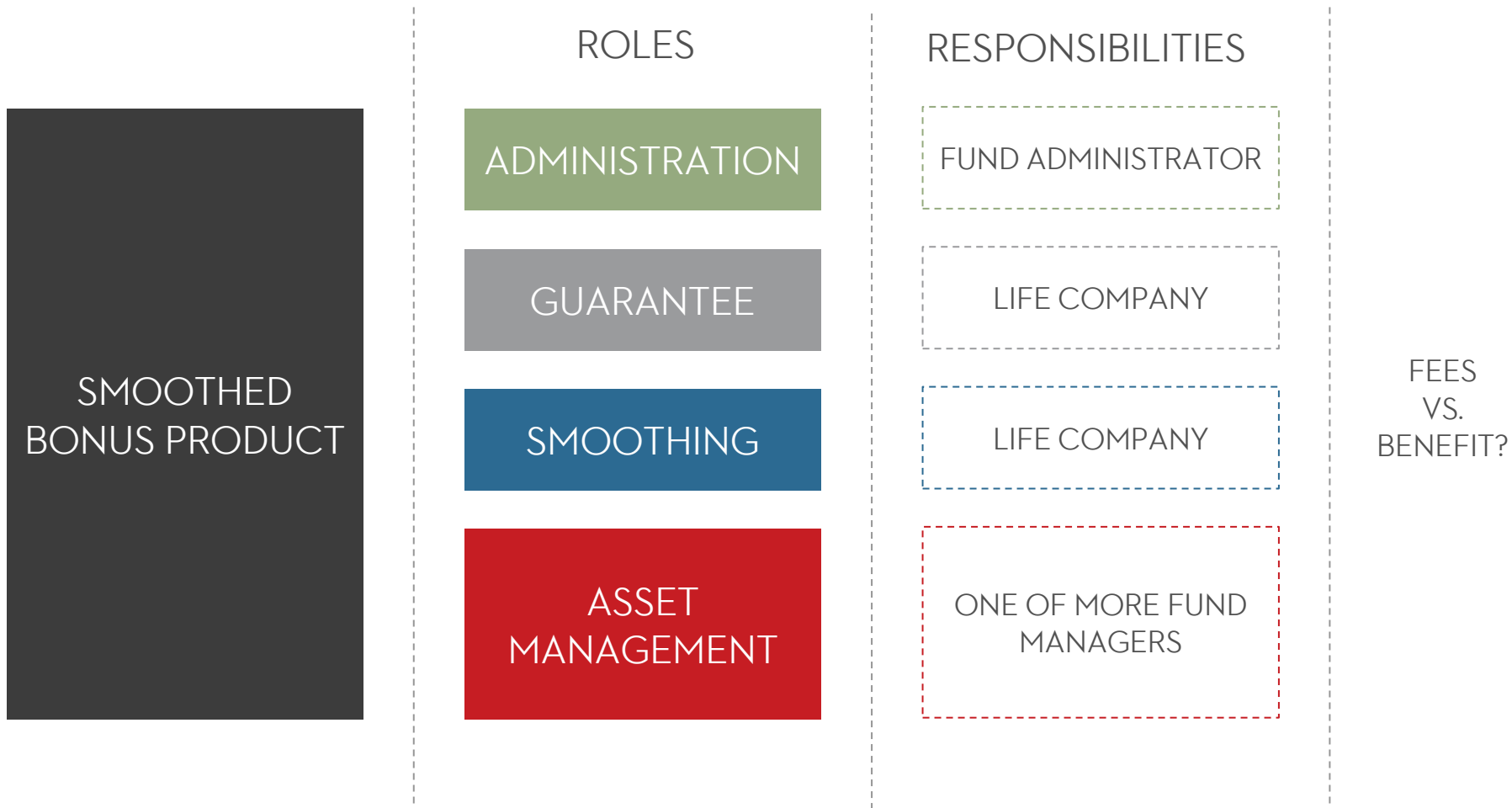
## HISTORICAL FACTOR EXPOSURE



source: Morningstar

- Trustees are held responsible
- Consultants role is to ensure you understand the concepts

# EXAMPLE: SMOOTHED BONUS





## \ Data Visualisation

- [www.tableausoftware.com](http://www.tableausoftware.com)
- MS Excel

## \ Performance Analysis

- [www.morningstar.com](http://www.morningstar.com)
- [www.statpro.com](http://www.statpro.com)
- Fund managers have access to: Bloomberg, Reuters, Factset

# CONTACT DETAILS

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QUESTIONS?