

# The Norwegian Government Pension Fund – Review of Active Management

Oslo

22 September 2014

Remarks on

## Ang, Brandt and Denison

### Review of the Active Management of the Norwegian Government Pension Fund - Global

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# 1. Plan

- Sources of expected return
- What factors should be used
- What equity should be used
- Beware of inefficient benchmark
- Understanding rebalancing
- Summary and recommendations
- Postscript

## 2. Sources of Expected Return

- Two sources of expected returns
  - Premiums for taking various types of “risk”
  - Misvaluation of assets

## 2. Sources of Expected Return

- What should a \$900 billion investor with a very long horizon do?
  - Start with the theoretical implication of the CAPM
  - Add active component

## 2. Sources of Expected Return

- CAPM
  - Macro-consistent (every investor can do this at the same time)
  - Value-weighted portfolio of all equities, real assets, and even human capital

## 2. Sources of Expected Return

- Any deviation from the market portfolio is an “active” bet

## 2. Sources of Expected Return

- Active returns
  - Currently a very small amount of the portfolio is considered “active” (1%) and I agree with the recommendation to move that part higher
  - There are two types of active returns

## 2. Sources of Expected Return

### 1. Systematic risk tilting

- In the CAPM, expected returns are generated by contribution to market risk
- We simplify this with a simple measure of risk, the beta
- Intuitively, a stock portfolio is riskier than a government bond portfolio and should be rewarded with a premium

## 2. Sources of Expected Return

### 1. Systematic risk

- Behind the market portfolio intuition are exposures to various types of risks (which might include sensitivity to movements in the business cycle, unexpected inflation, illiquidity, etc.)
- Expected returns higher than the market portfolio can be generated by tilting (taking more exposure than the market portfolio) to certain risks

## 2. Sources of Expected Return

### 1. Systematic risk

- CAPM is usually presented in terms of mean and variance
- However, it also says something about downside risk or skew
- Each asset has a second beta that tells us the contribution to the downside of the portfolio
- Expected returns are higher for lower skew (investors do not like downside risk)

## 2. Sources of Expected Return

### 2. Misvaluation

- Certain trading strategies like momentum, value, and size may exploit mispricing and, as such, earn an expected return
- Understanding these trading strategy factors is challenging because some of the strategy return may be due to systematic factors

## 2. Sources of Expected Return

### 2. Misvaluation

- Example: Size. Some argue there is a premium to small capitalization firms because of lack of information. But size is a very crude characteristic. You can be small because you are new and growing or small because you were large and are failing.
- Some of the premium could be a reward for systematic illiquidity

## 2. Sources of Expected Return

### 2. Misvaluation

- Example: Value. A value strategy is similar to a rebalancing strategy. You buy as prices go down and sell as prices go up. This is essentially like a short straddle – which has negative skew
- So part of the reward for value or size is due to systematic factors and part due to mispricing – and it is difficult to disentangle

## 2. Sources of Expected Return

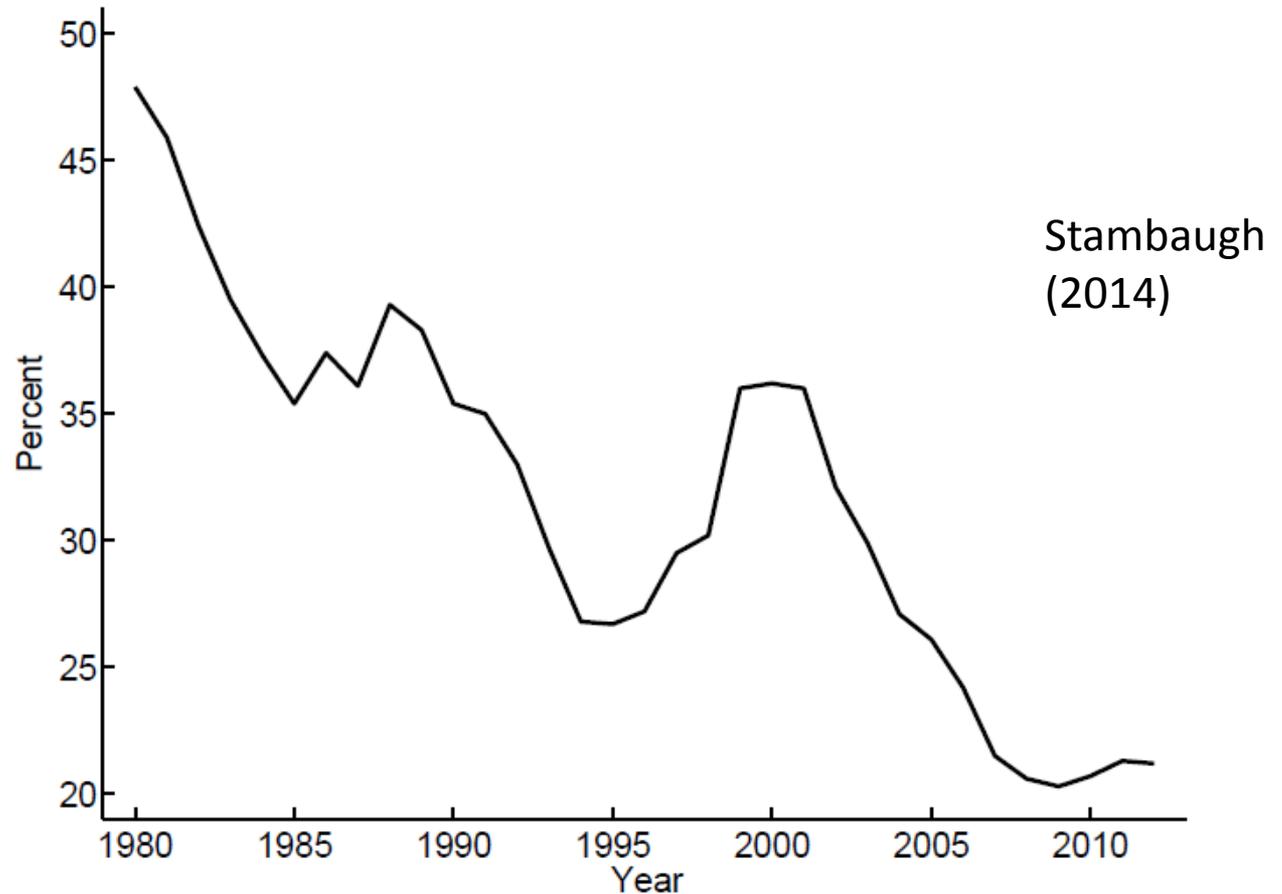
### 2. Misvaluation

- Any of these misvaluation strategies is problematic for large investors
- These strategies are not macro-consistent (for every value tilt there must be someone willing to take the other side). If there is a consistent premium, at minimum, you would think the sellers would shift to market capitalization weights
- Sharpe's recent taxonomy
- Harder to find misvaluation

# 2. Sources of Expected Return

## 2. Misvaluation

Individual Equity Ownership



## 2. Sources of Expected Return

### 2. Misvaluation

- Note that “alpha” is derived from misvaluation
- Any extra return from systematic strategies is simply a reward for risk – however, there is a qualification

## 2. Sources of Expected Return

### 2. Misvaluation

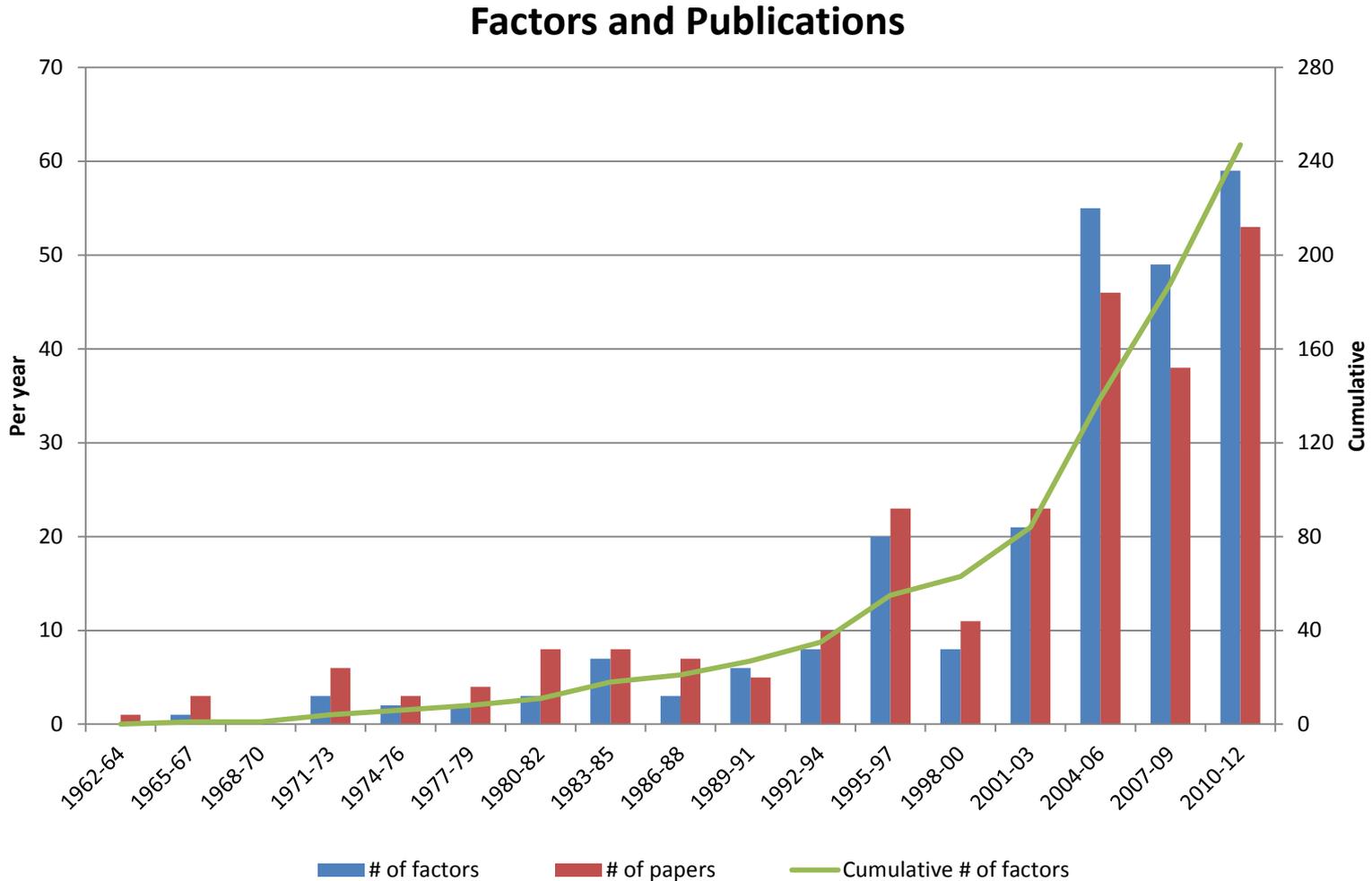
- Certain risks such as Illiquidity risk may be rewarded differently depending on the investment time horizon of investors
- If the market is dominated by short-term investors that are adverse to illiquidity, there may be opportunities for long-term investors to buy cheap
- GPFG should be at every fire sale.

### 3. What factors should be used?

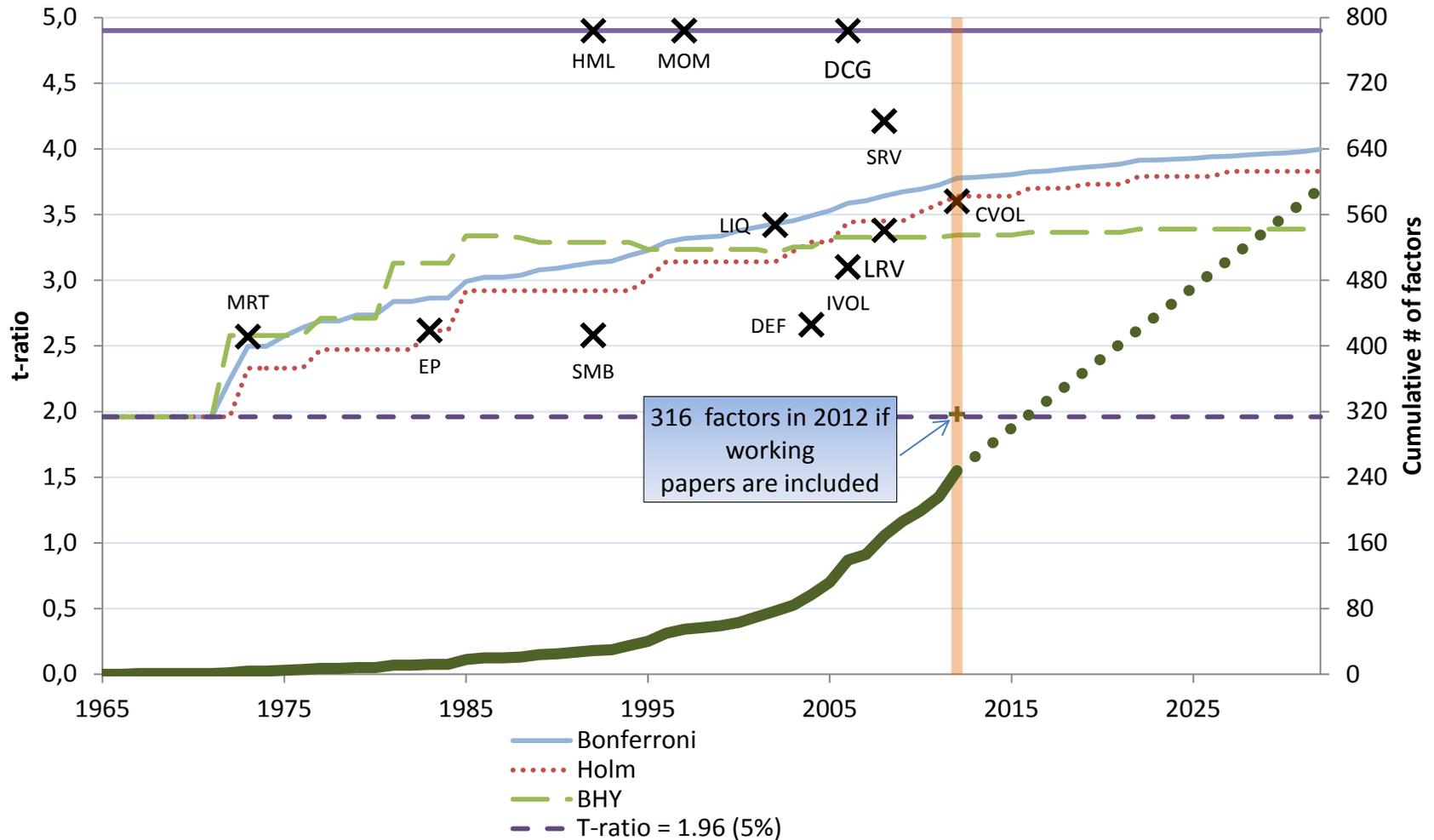
My research shows a “feeding frenzy” when it comes to “discovering” new factors.

- My paper “... and the Cross-Section of Expected Returns” documents 316 factors that have been published since 1967.
- Given this large number and the fact that many more have been tried but not published, we need to adjust significance levels
- See <http://ssrn.com/abstract=2249314>

# 3. What factors should be used?



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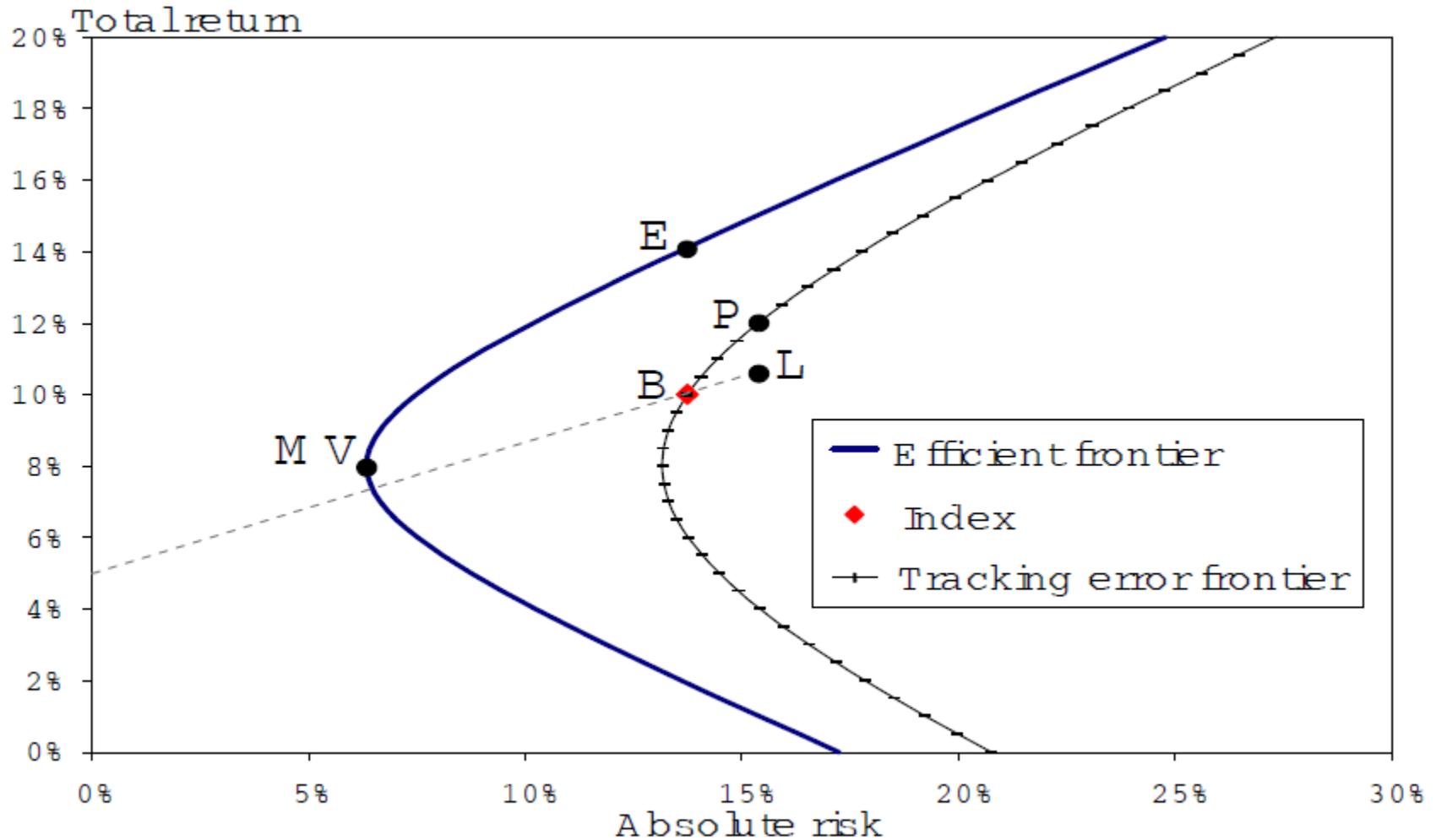
## 4. What equity should be used?

- Equity should not be restricted to public equity that happens to show up in MSCI indices
- Theory suggests all equity which includes:
  - Equity not in MSCI
  - Private equity
  - Investment in private firms
  - Venture capital
  - Project investment

## 5. Beware of inefficient benchmark

- Tracking error optimization is not recommended for two reasons:
  - 1. Forces you inside the efficient frontier with constraints
  - 2. Leads to counterintuitive situations: you can have unacceptably large tracking error by beating the benchmark each period.

# 5. Beware of inefficient benchmark



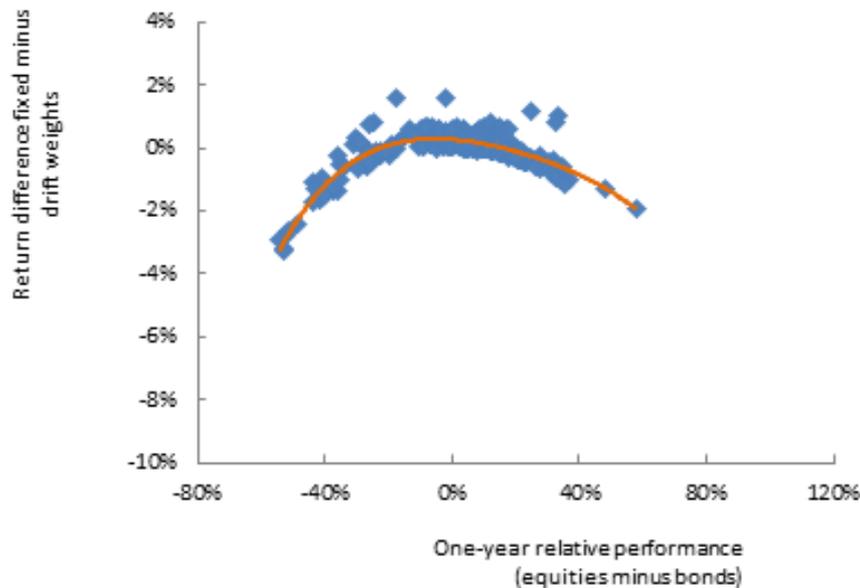
# 5. Beware of inefficient benchmark

- Better to give NBIM ranges of acceptable allocations and let them do their job
- Tracking error appropriate when agency problems are extreme – and this is not the situation with NBIM (everyone is on the same team)

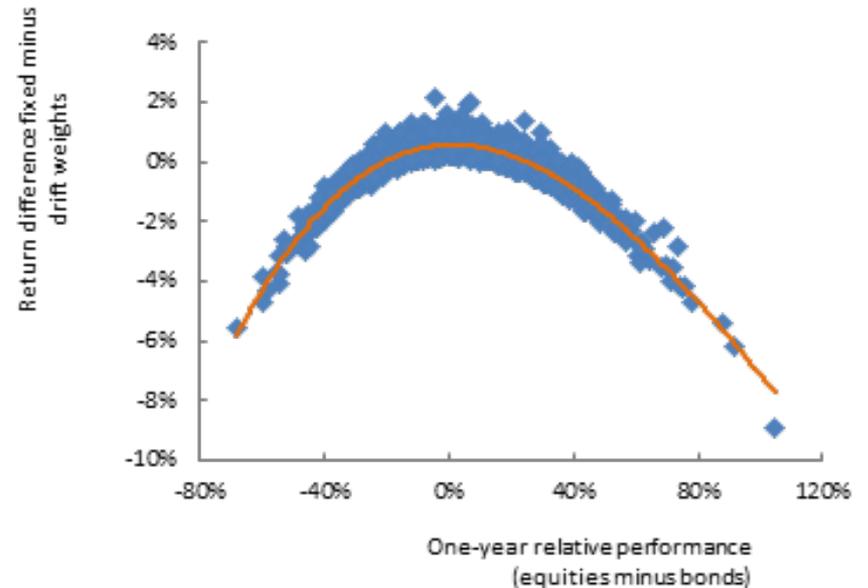
# 6. Understand rebalancing

- It is a pure negative skew strategy. Example: 60/40 equity bonds.

A. One-year returns on empirical data  
Fixed-weight rebalancing *minus* drift weights



B. One-year returns on simulated data  
Fixed-weight rebalancing *minus* drift weights



Source: Reuters, Man calculations. Date range: January 1990 to February 2014. Monthly rebalancing.  
Harvey Discussion: 2014

# 6. Understand rebalancing

- The key is timing. You got the timing right in 2009
- Will you get it right in the future?
- New research, “Rebalancing Risk” by Granger, Greenig, Harvey, Rattray and Zou.  
<http://ssrn.com/abstract=2488552>

# 7. Summary and recommendations

Ang, Brandt and Denison is high quality work and their recommendations make sense

Recommendations:

## 1. Give NBIM more flexibility

- Consider broader allocation “bands”
- Consider downside tracking error
- NBIM can only operate within the ranges of a benchmark portfolio and, as such, the benchmark portfolio needs to be economically justified

# 7. Summary and recommendations

Recommendations (continued):

## 2. Beware of the factor zoo

-In my opinion, many of the popular factors are not “true” factors (where true means rewarded with a risk premium)

-Misvaluation factor “premiums” rely on people continually making the same mistake

# 7. Summary and recommendations

Recommendations (continued):

## 3. Opportunity Cost Model

- Sensible way to move forward
- It makes economic sense
- Validated in practice

# 7. Summary and recommendations

Recommendations (continued):

## 4. Reexamine the rebalancing strategy

- Rebalancing is an active strategy
- Consider using quantitative models to assist in the timing of rebalancing