



**CUREMhorizonte**



**MPT Applied to Real Estate: Are there Alternatives?**

**Presented by John Gellatly  
Head of Real Estate Fund of Funds**

**Zurich, 24<sup>th</sup> June 2008**

**BLACKROCK**



“Not everything  
that counts can be  
counted, and not  
everything that can  
be counted counts”



Source: Albert Einstein, 1879-1955

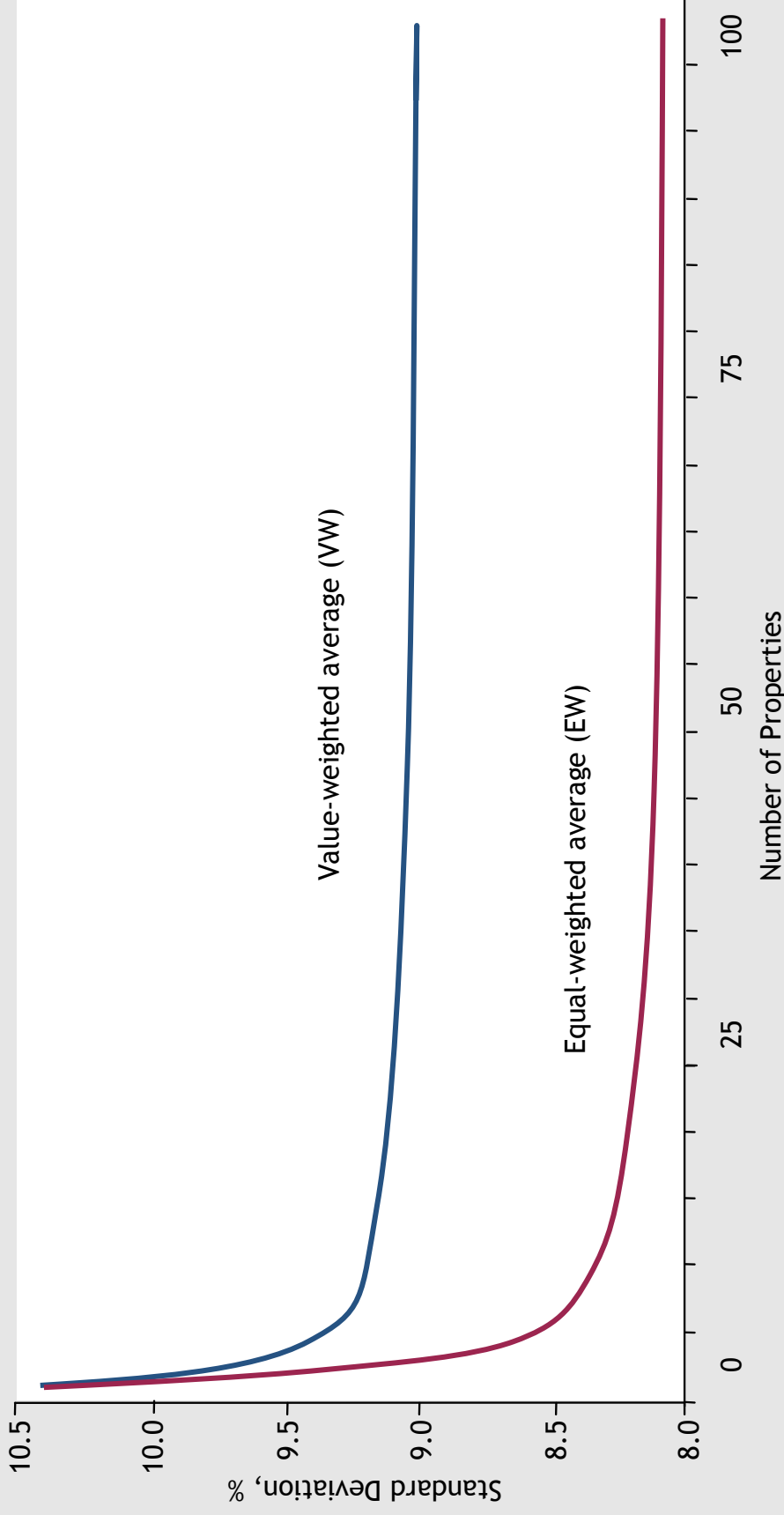
2



Zürich, June 24<sup>th</sup> 2008

BLACKROCK

# MPT and Real Estate - Naive Risk Reduction

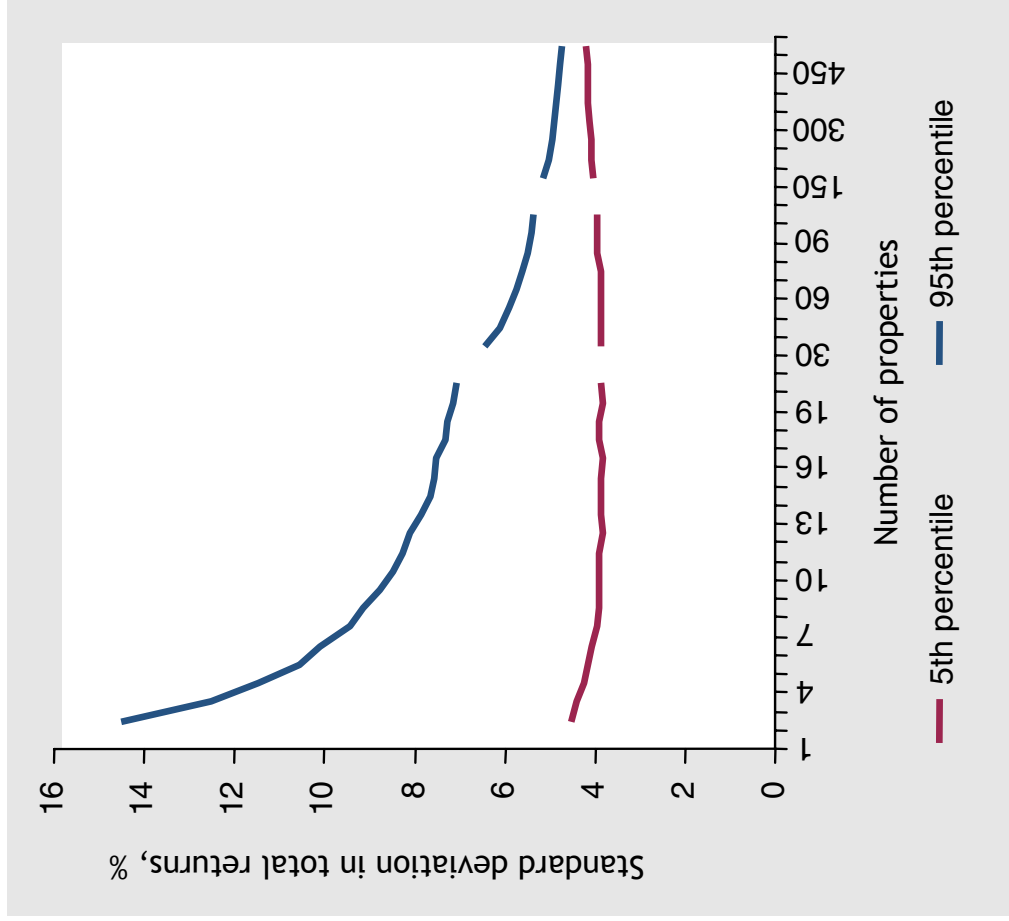
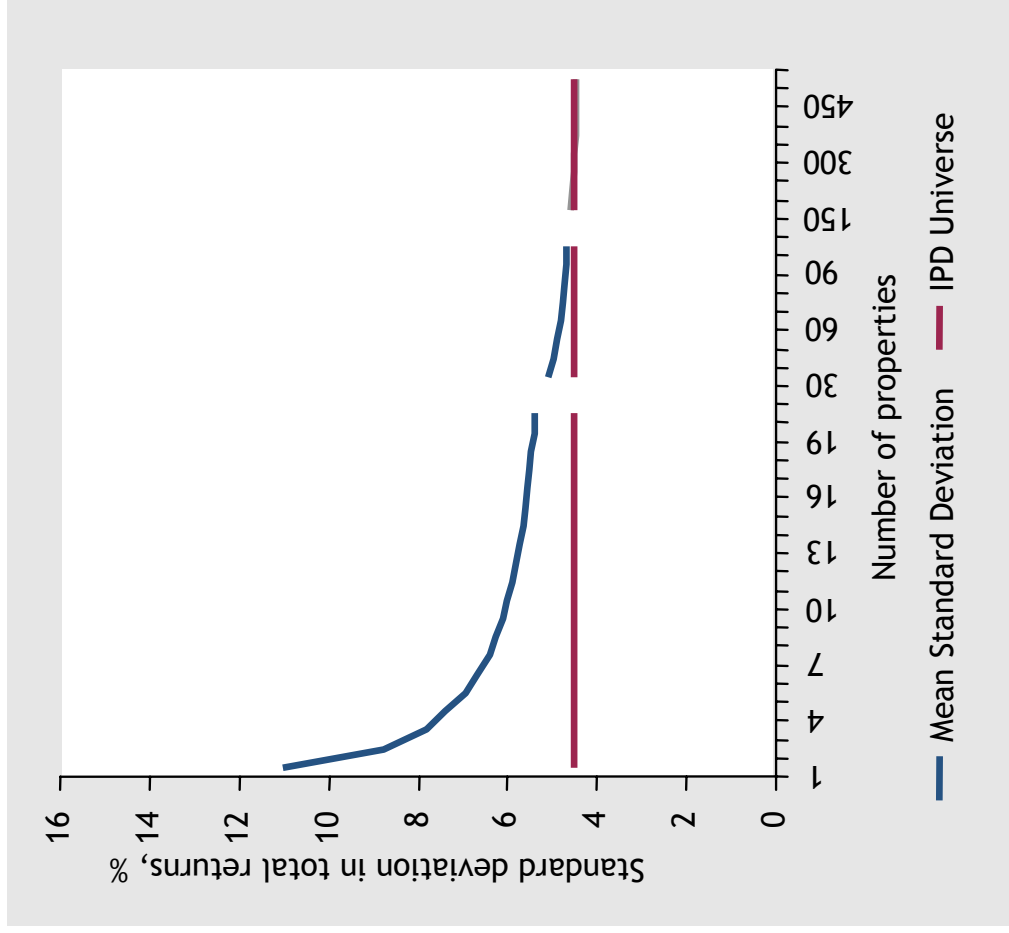


Source: Stephen Lee, University of Reading Business School, 22nd February 2006.



# MPT and Real Estate - Slightly less Naive

## Standard Deviation in Returns for Simulated Portfolios 1994-2004



Source: IPF "Risk Reduction and Diversification in Property Portfolios". Note: The gaps in the lines reflect changes in the intervals at 20 and 100 properties.

## MPT and Real Estate - Diversification by Buildings

- The averages do not tell how risky one's own portfolio actually is.
- Both EW and VW series have large spreads (even at x1 SD)
- VW series are, on average, more risky than EW
- Different property types exhibit different characteristics
- Which has implications at the Fund / Portfolios level:
  - Their size (number and value)
  - Sector focused funds
  - Funds launched into new / alternative sectors

## Differential Diversification

UK Market Segments	Properties required to be 75% diversified	Average correlation in returns between properties vs segment	Cost of assembly at 2005 average lot size (£m)
Standard Retail - S. East	16	0.22	110
Standard Retail - Rest UK	9	0.20	60
Shopping Centres	12	0.21	1,018
Retail Warehouses	12	0.27	299
City Offices	10	0.29	222
West End Offices	11	0.21	178
Rest of S.E. Offices	14	0.22	219
Rest of UK Offices	30	0.18	296
Industrial - S. East	11	0.16	103
Industrial - Rest UK	15	0.16	91
<b>All Property</b>	<b>30</b>	<b>0.18</b>	<b>401</b>

Implied Total AUM assuming a 7.5% allocation to real estate = £5.3bn

Source: IPD, IPF, BlackRock.

6



Zurich, June 24<sup>th</sup> 2008

BLACKROCK

## MPT and Real Estate - Fundamental Concerns

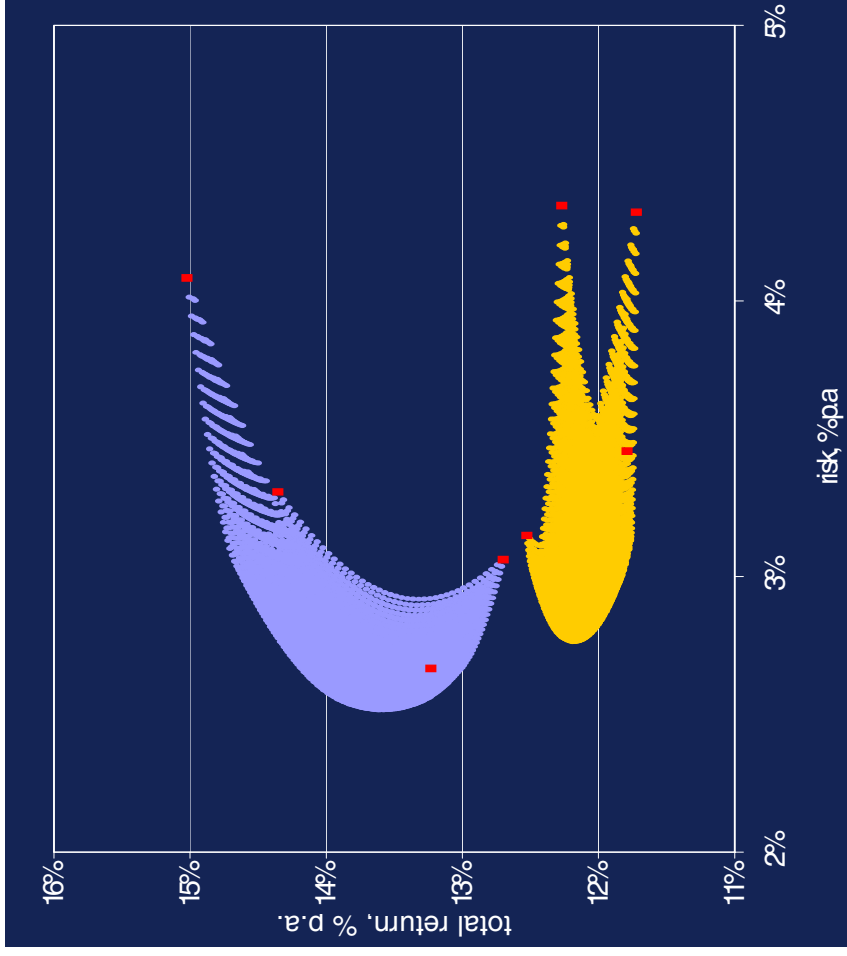
- “Portfolio analysis tools were designed with stocks in mind and therefore can be highly problematic when applied to real estate”

*Cass Business School, February 2006*

- **Which measures of risk?**
  - STD, VAR, Asymmetric Analysis
  - Practical investment concerns: liquidity, capital protection etc
- **Normality / Skewness**
- **Higher Cross Moments and “Tail Risk”**

# Real Estate Practice - Optimal UK Portfolios

## Risk/Return Profile over 10 Years



Source: IPD Pooled Property Fund Indices Q2 1996 - Q2 2006, MLIM Internal

Technically, real estate portfolios do optimise

But problems with:

- Optimising using history v forecasts
- Accessibility to opportunities
- Pricing of the units

Result is (potentially) a large portfolio of funds

- Which risks over diversification
- Construction by statistics not common sense



## MPT - Inappropriate Application for Fund of Funds

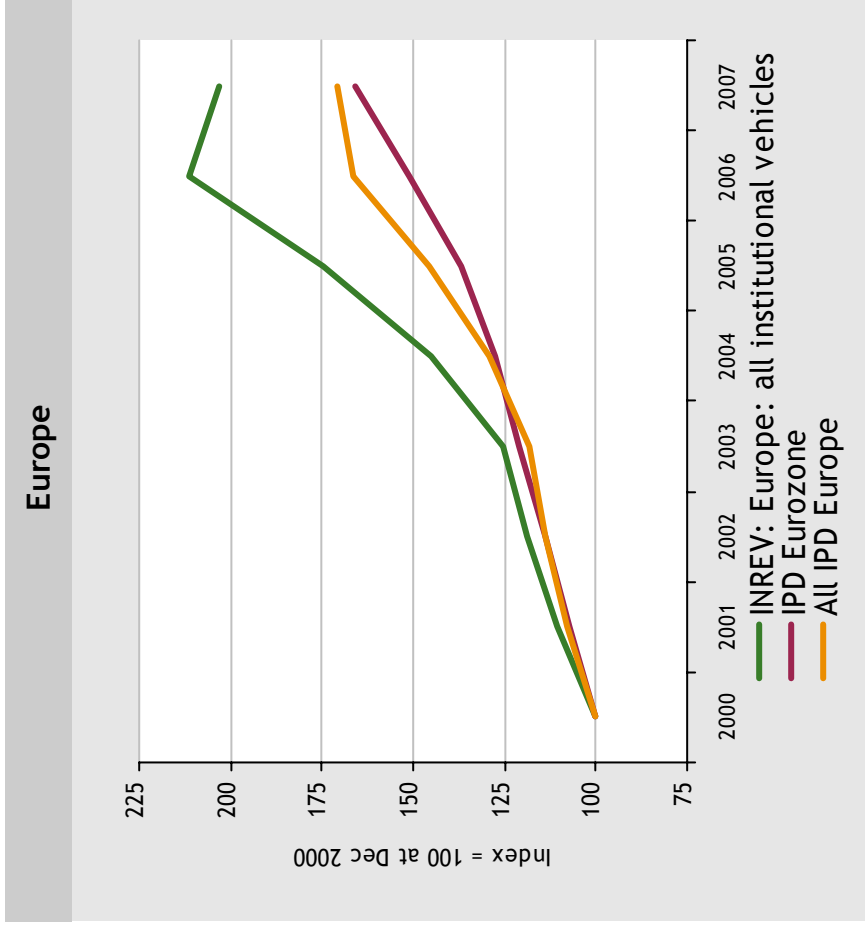
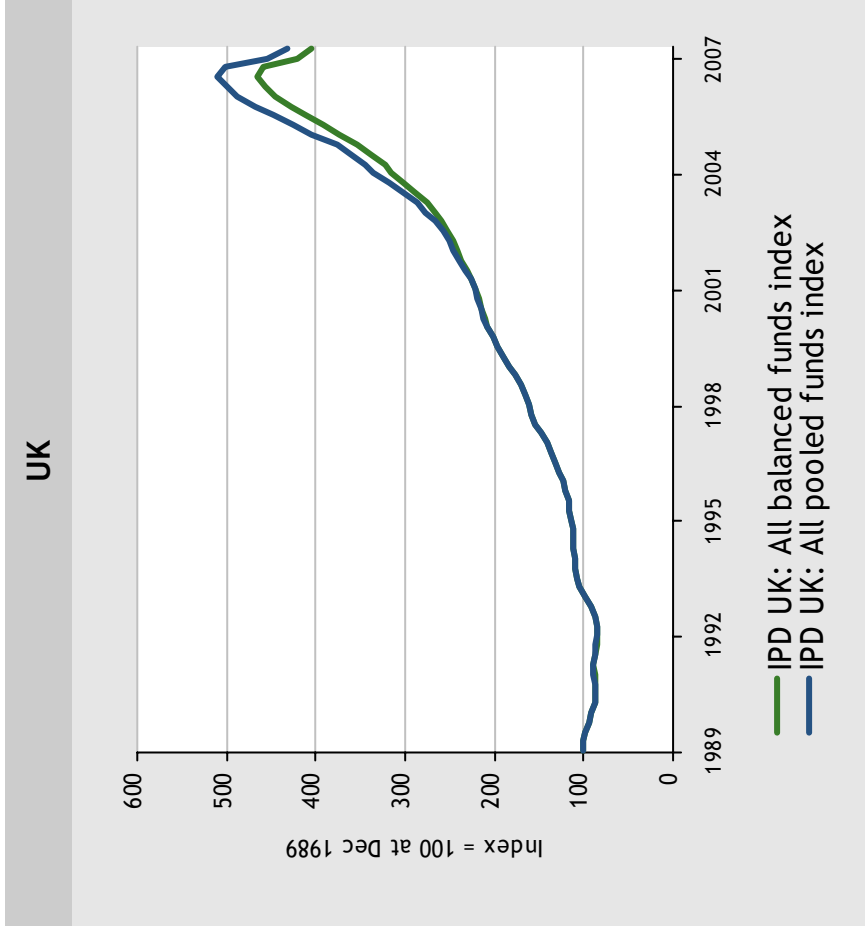
### Statistical base too small and too short:

- Substantial short term growth in universe (UK and Europe)

### Analysis of short term performance captures:

- Only beta
- Small and/or closed end funds (limited access)
- Geared plays into strong markets
- Lack of longer term cyclical performance

# Real Estate Practice - Immature Indices

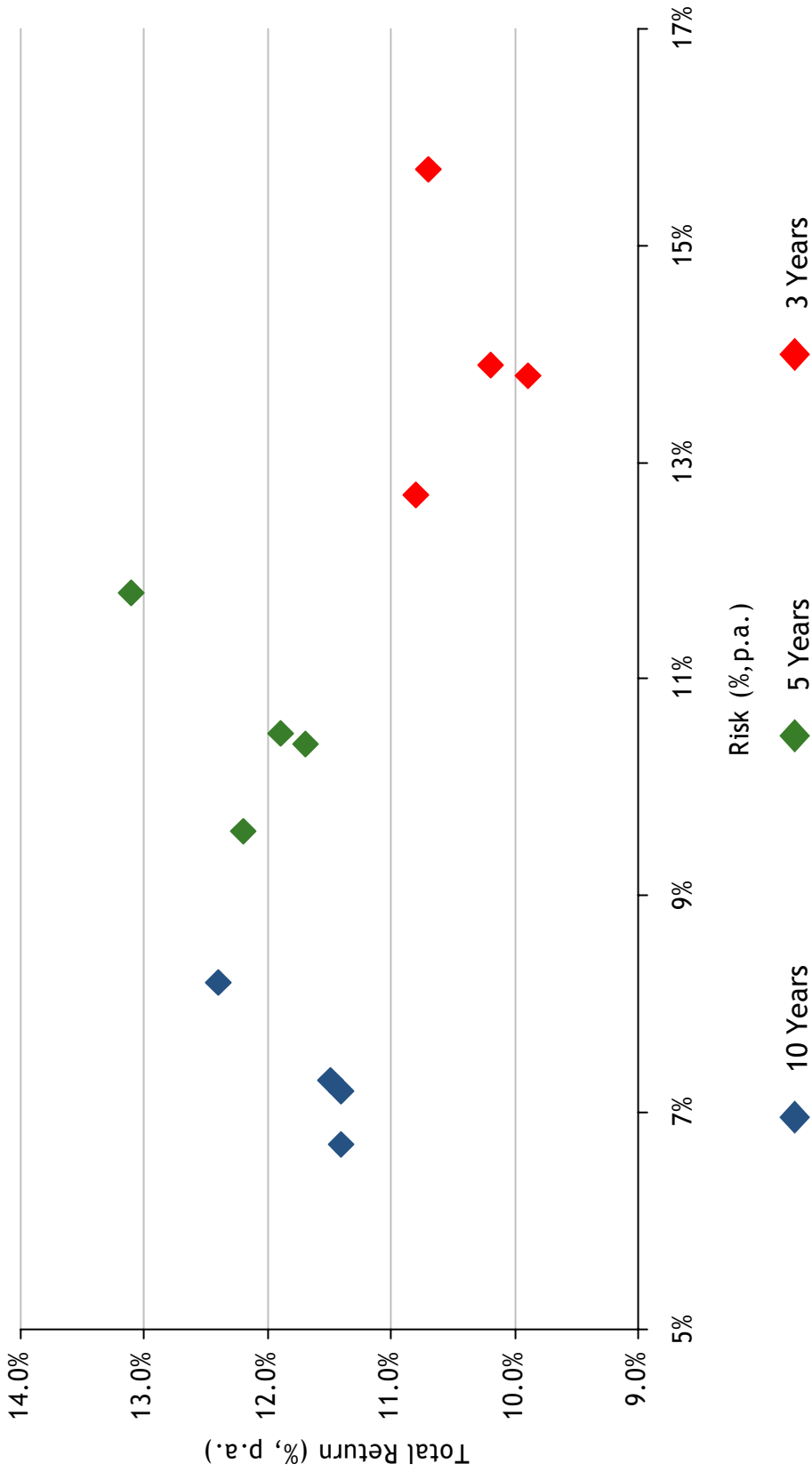


Market indices are still relatively immature

Source: IPD Pooled Fund Indices to Mar 2008, INREV. Note: INREV Funds & European IPD Indices returns in €, UK Indices in £.



# Real Estate Practice - Which Benchmark?



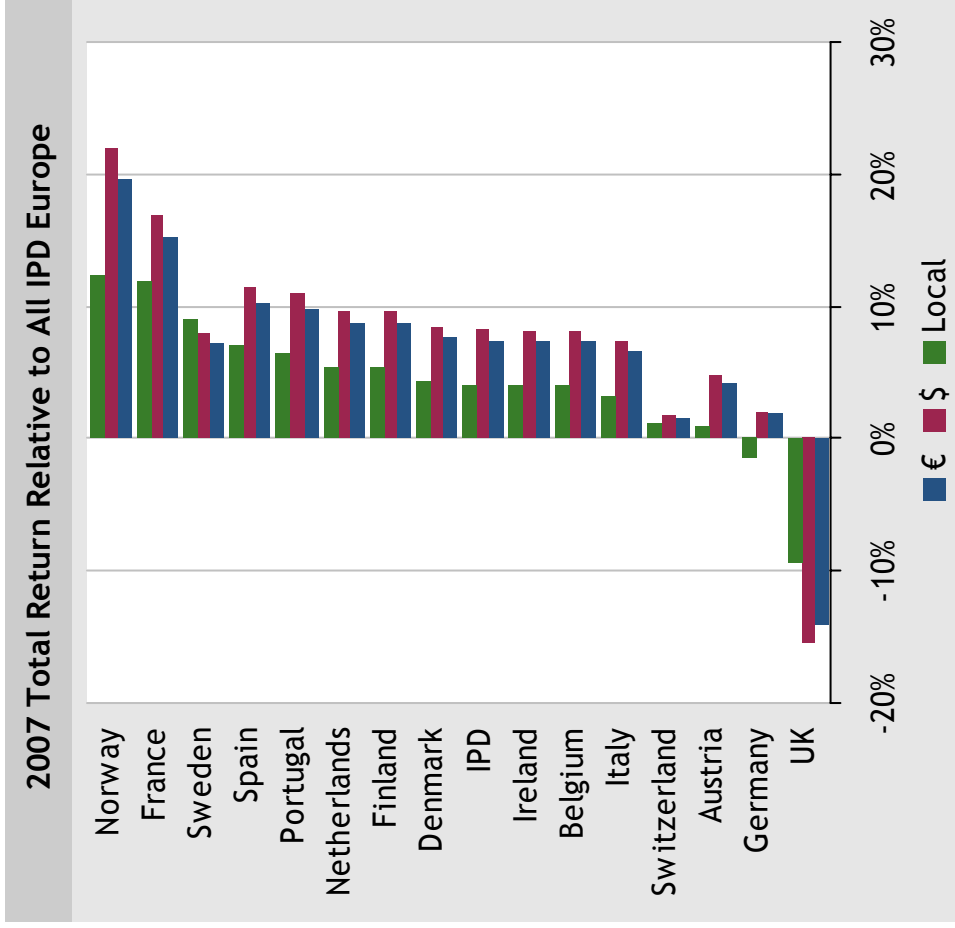
The choice of benchmark significantly impacts strategy

Source: IPD, IPD Pooled Property Fund Indices, BlackRock Internal to Dec 2007.



## Real Estate Practice - Ex Domestic Considerations

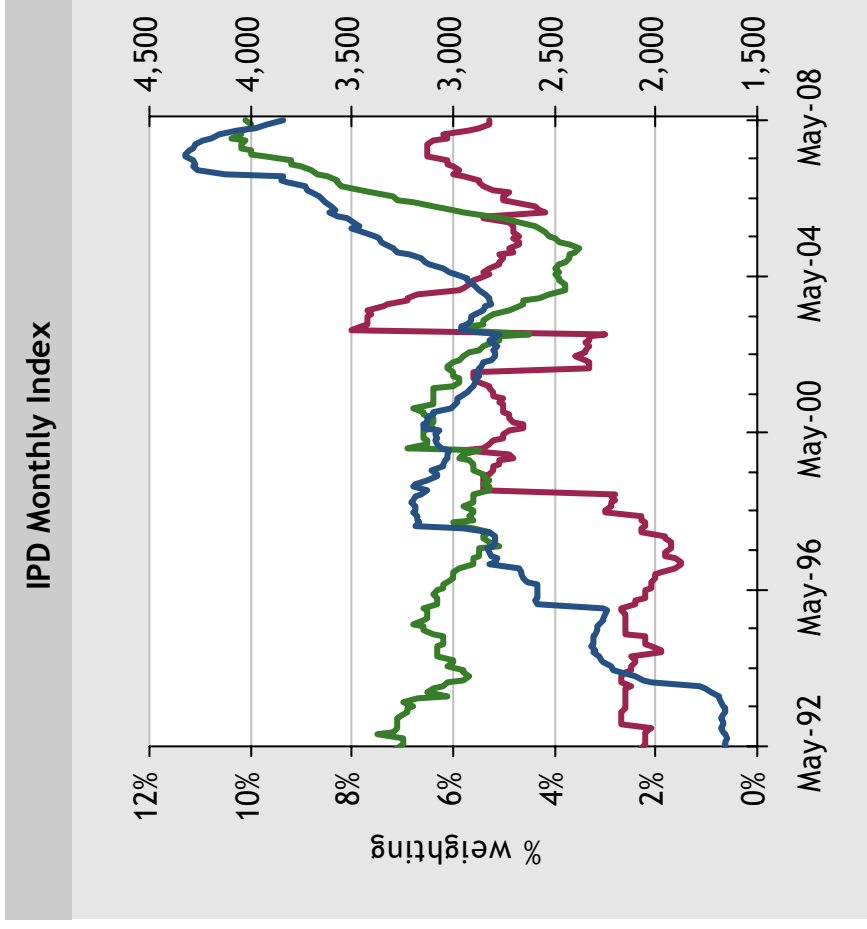
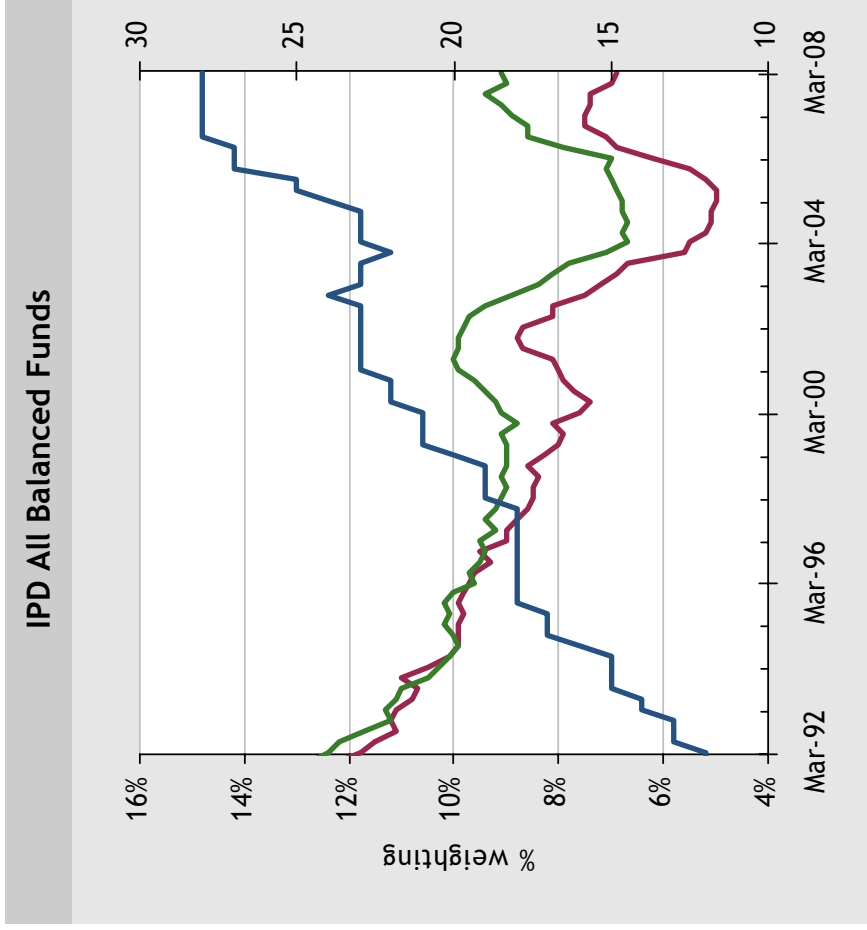
- **Currency**
- **IPD Composition**
  - 41.2% of Europe Index is Office
  - 47.5% of Swiss Index is Residential
- **Market Representation**
  - All IPD Europe: 43% of Total Real Estate Assets
  - Switzerland: 31% of Total Real Estate Assets



IPD is not Beta!!

Source: IPD as at Dec 2007, BlackRock Internal

# Real Estate Practice - Evolving Benchmarks



— City Offices — West End & Mid Town Offices — Number of Funds / Properties (rhs)

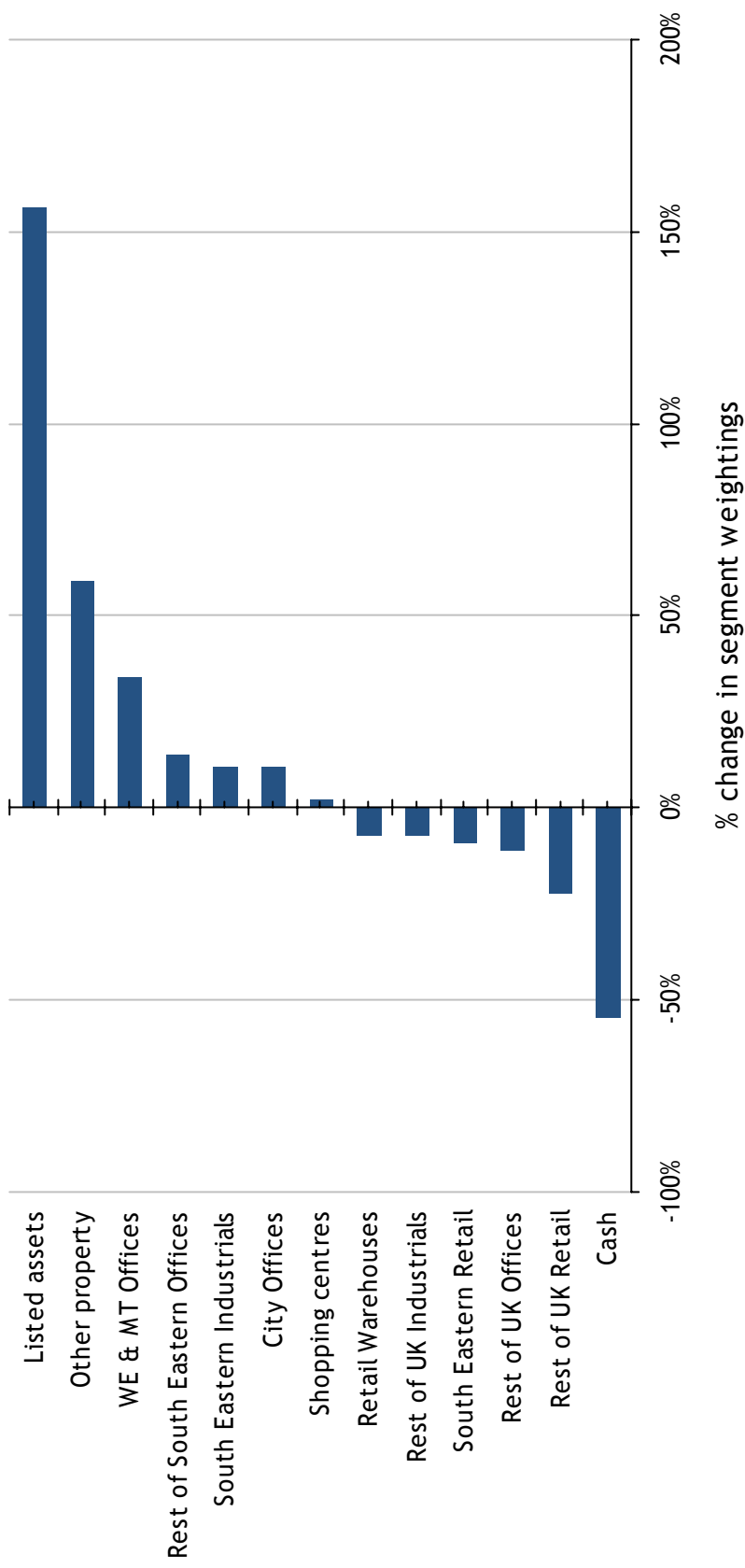
**Benchmark compositions are very fluid**

Source: IPD Pooled Property Fund Indices, IPD Monthly Market Digest, BlackRock Internal



# Real Estate Practice - Evolving Fund Structures

## 10 Largest Funds in the IPD All Balanced Funds Index, Q1 2006 to Q1 2008



The underlying funds are changing their profiles

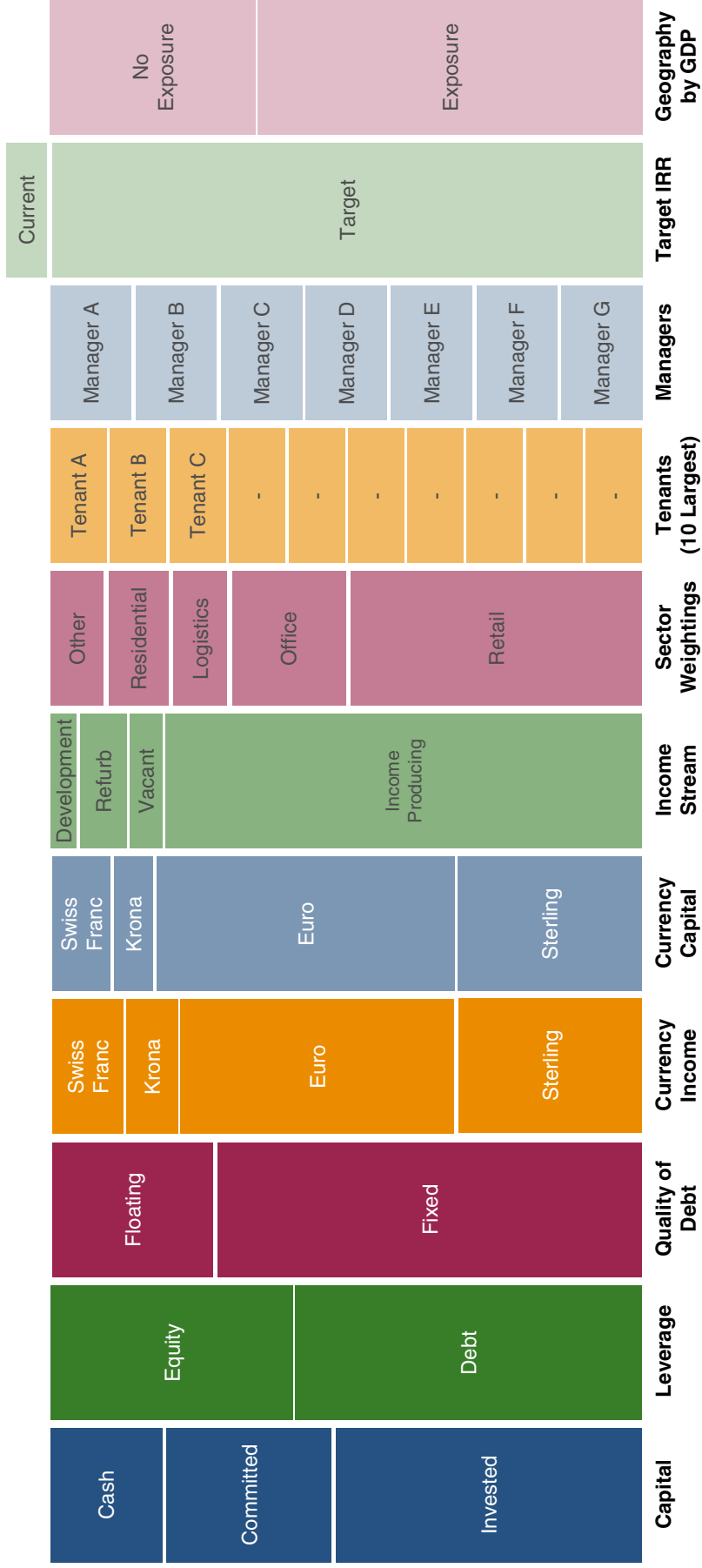
Source: IPD Pooled Property Fund Indices, BlackRock Internal.

Portfolio Construction should focus on more than just risk/return

Diversification of other measures e.g.:

- Composition of return
- Style (including gearing)
- Lease expiry & rent review profile
- Covenant & Manager risk
- Termination Dates
- Liquidity Provisions

# Portfolio Evaluation - Monitoring the Funds



Different risk measures focused upon through the cycle

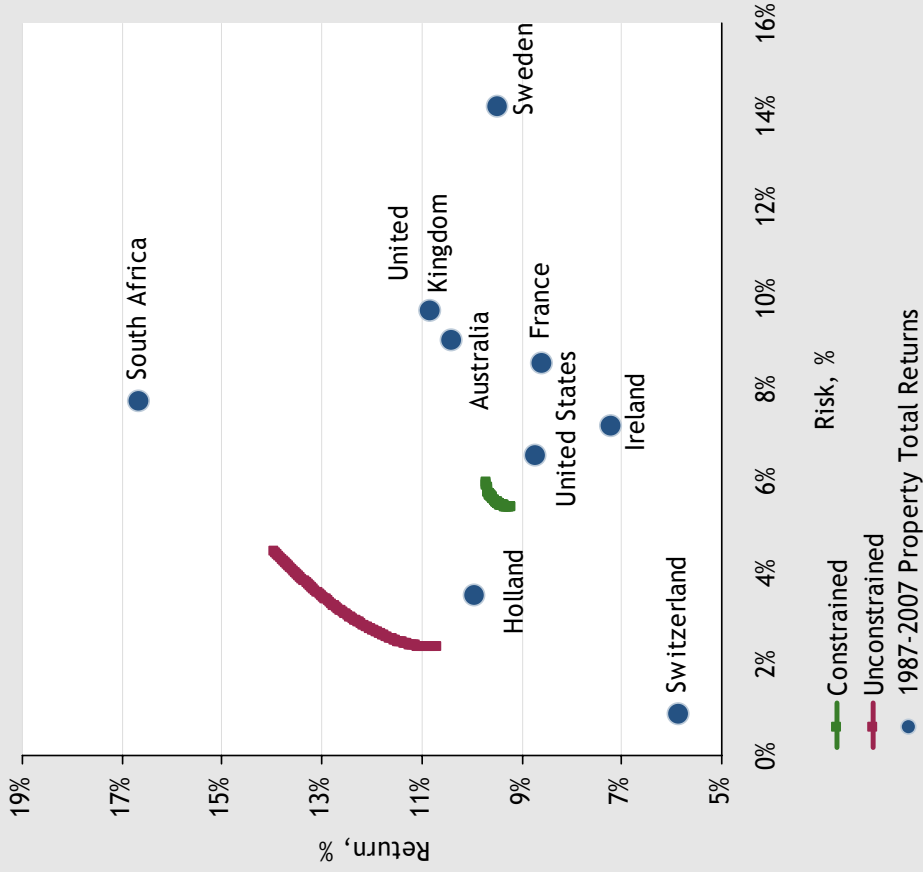
Source: BlackRock Internal. For illustrative purposes only.





# Real Estate Practice - Going Global

Constrained vs. Unconstrained Optimisations



- Allocation
- Tax
- Structures
- Costs
- Currency

Source: IPD, NCREIF, BlackRock Internal. For illustrative purposes only. Note: Optimisation excl. Switzerland.



## Summary

- **Modern Portfolio Theory is a good starting point**
- **But:**
  - MPT has its own technical shortcomings
  - Was not designed with real estate in mind
- **Real estate is**
  - Heterogeneous
  - Multi-faceted / a real asset
  - Still lacking in data
- **Portfolio construction is therefore more dependent on:**
  - Common sense
  - Good manager selection skills

## The Following Notes Should be Read in Conjunction With This Presentation

1. Issued by BlackRock Investment Management (UK) Limited, authorised and regulated by the Financial Services Authority. Registered office: 33 King William Street, London, EC4R 9AS. Tel: 020 7743 3000. Registered in England No. 2020394. For your protection telephone calls are usually recorded. BlackRock is a trading name of BlackRock Investment Management (UK) Limited.
2. This confidential document is for informational purposes only and does not constitute an offer to sell or a solicitation of an offer to buy any securities described herein. Shares of a fund cannot be purchased except by way of the fund's Confidential Private Offering Memorandum, which contains numerous disclosures concerning the risks of investing in the fund and should be reviewed in its entirety prior to investment. Potential investors are urged to consult a professional advisor regarding the possible economic, tax, legal or other consequences of entering into any investments or transactions described herein. All investments risk the loss of capital and there is no guarantee or assurance that an investment in a Fund will achieve its investment objective. An investment in the Fund is speculative and should form only part of a complete investment program, and an investor must be able to bear the loss of its entire investment. This presentation is not to be copied or distributed, without the prior written consent of the BlackRock Alternative Advisors business unit of BlackRock, Inc. ("BAA").
3. Past performance is not a guide to future performance. The value of investments and the income from them can fall as well as rise and is not guaranteed. You may not get back the amount originally invested. Changes in the rates of exchange between currencies may cause the value of investments to diminish or increase. Fluctuation may be particularly marked in the case of a higher volatility fund and the value of an investment may fall suddenly and substantially. Levels and basis of taxation may change from time to time.
4. Property investments may be illiquid. Since the underlying investments of the Fund will consist wholly or substantially of indirect investment in real property, investors seeking to redeem their holdings may experience significant delays in certain market conditions. Further, the value of real property is a matter of valuer's opinion rather than fact and may fluctuate up or down. Property funds will not contribute diversification where investors already have a substantial proportion of existing investments in property.
5. Any research in this document has been procured and may have been acted on by BlackRock for its own purpose. The results of such research are being made available only incidentally. The views expressed do not constitute investment or any other advice and are subject to change. They do not necessarily reflect the views of any company in the BlackRock Group or any part thereof and no assurances are made as to their accuracy. All opinions and estimates are based on assumptions, all of which are difficult to predict and many of which are beyond the control of BlackRock. In addition, any calculations used to generate the estimates were not prepared with a view towards public disclosure or compliance with any published guidelines. In preparing this document, BlackRock has relied upon and assumed, without independent verification, the accuracy and completeness of information provided by third parties. BlackRock believes that the information provided herein is reliable; however, it does not warrant its accuracy or completeness.
6. Index performance is included for illustration only, and, although useful for general observations, differences between the composition and construction of such indices and any particular portfolio may limit their usefulness for direct comparisons. For example, it should be noted that indices will vary, in some cases significantly, from the composition of any particular portfolio in terms of the number of positions, types of hedge fund strategies included and distribution within such hedge fund strategies and other characteristics. Moreover, index information may or may not reflect the deduction of fees and expenses levied in connection with an actual portfolio. Indices are included from IPD, IPD Fund Indices and INREV. Contact the organisations for further details on Index construction.
7. This material is for distribution to Professional Customers (as defined by the FSA Rules) and should not be relied upon by any other persons.
8. Subject to the express requirements of any client-specific investment management agreement or provisions relating to the management of a fund, we will not provide notice of any changes to our personnel, structure, policies, objectives or, without limitation, any other matter contained in this document.
9. Unless otherwise specified, all information contained in this document is current as at the date of presentation.
10. The information contained herein is proprietary and confidential and may contain commercial or financial information, trade secrets and/or intellectual property of BAA and/or its affiliates (together with BAA, "BlackRock"). If this information is provided to an entity or agency that has, or is subject to, open records or open meeting laws or similar or related laws, rules, regulations or policies that do or may permit disclosure of any portion of this information to any person or entity other than the entity to which it was provided by BlackRock (collectively, "Sunshine Laws"), BlackRock hereby asserts any and all available exemption, exception, procedures, rights to prior consultation or other protection from disclosure which may be available to it under the applicable Sunshine Laws.
11. This is an original unpublished work protected under copyright laws of the United States and other countries. All Rights Reserved. Should publication occur, then the following notice shall apply: © 2008 by BlackRock. No part of this document may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written consent of BlackRock.

