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# The role of financial leverage in the performance of private equity real estate funds

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# Outline

1. Motivation and objectives

2. Hypothesis development

3. Data and methodology

4. Results

5. Conclusion

# Motivation and objectives

# The basic idea of this study

- Efficient allocation of investment capital within the unlisted, private equity real estate fund universe requires adequate assessment of risk/ return profiles

- In contrast to the listed real estate sector, especially the impact of leverage on excess fund returns remains unclear

**Research objective:**

We examine the performance of a sample of global private equity real estate investment funds, and particularly the role of leverage as well as managerial timing skills in making leverage choices

# Why does this study matter?

- Implications for investors, fund managers and transparency in the private equity real estate investment industry

  - Assess the contribution of managerial investment skill to fund performance, in particular ability to deploy leverage to good effect

  - Understand the value of managerial skill, distinguish between returns achieved through risk-taking via financial leverage and performance generated on the basis of genuine investment and financing skill

  - Analysis of the drivers of private equity fund returns further contributes to improved transparency in the analysis of fund performance in the private equity real estate industry

# Hypothesis development

# The long-term impact of leverage

- Some suggest that leverage can make a positive contribution to fund performance (Anson and Hudson-Wilson [2003])

- Others find that leverage is not a suitable long-term strategy for improving excess returns (Baum, Fear and Colley [2011, 2012])

- We re-examine the relationship between excess fund returns and leverage using a unique, large, global sample with observations covering an entire property cycle

**Hypothesis 1: The level of leverage held by a fund on average makes a positive contribution to excess fund returns**

# The short-term impact of leverage

- Managers may employ leverage to modify the market exposure of their funds and thus enhance performance (Goetzmann, Ingersoll, Spiegel and Welch [2007], Alcock, Glascock and Steiner [2012])

- We hypothesise that managers form a view on the likely strength of the underlying market in the future and optimise their fund's exposure to the market return accordingly by choosing the appropriate level of leverage

**Hypothesis 2: Timing leverage successfully makes a positive contribution to excess fund returns**

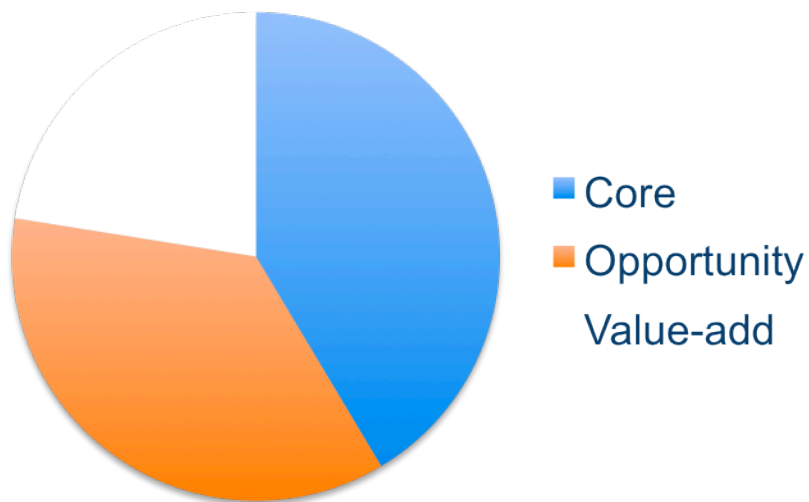# Data and methodology

# Data and methodology

- Sample

  - 169 firms investing in 16 global regions

  - Study period 2001-2011, sub-periods for robustness (2001-07, 2008-11)

  - Fund returns and leverage (debt to GAV) from PFR

  - Real estate market data from IPD

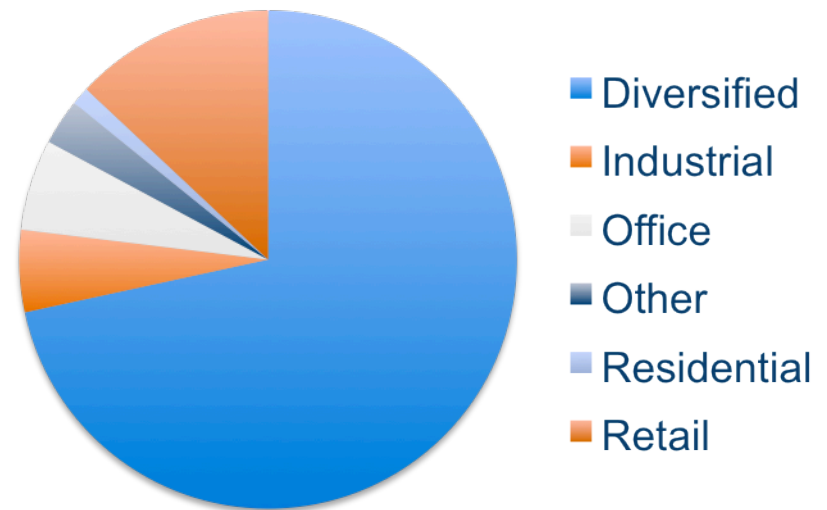  - Bond data from Bloomberg

- Methodology

  - Fixed effects annual panel

  - Single-factor market model augmented by

    - Style

    - Leverage

    - Timing

    - Interactions

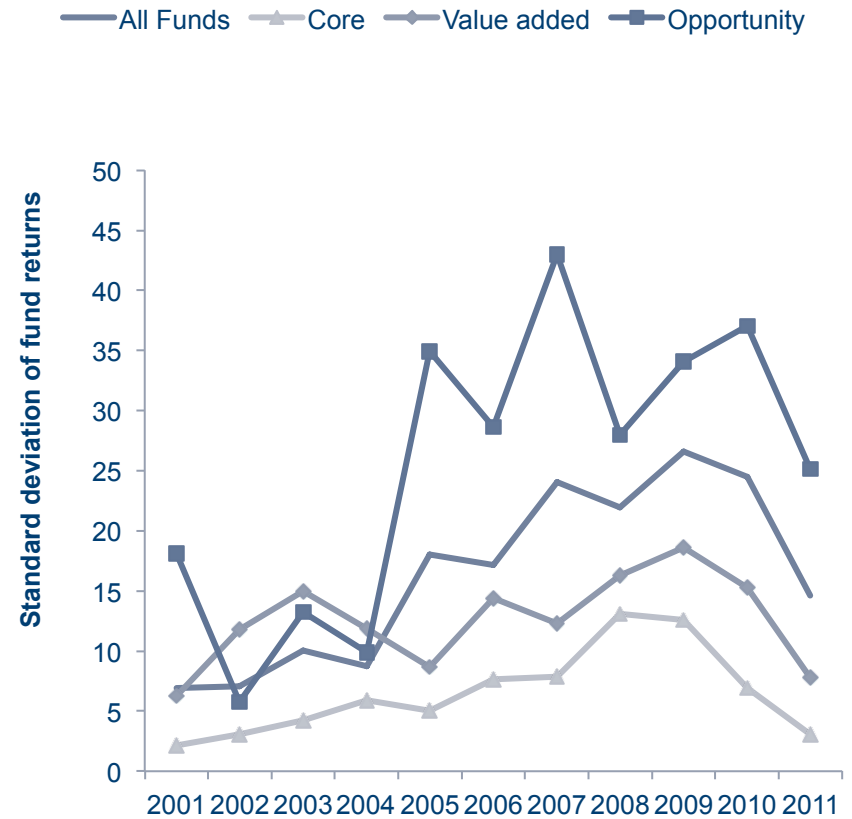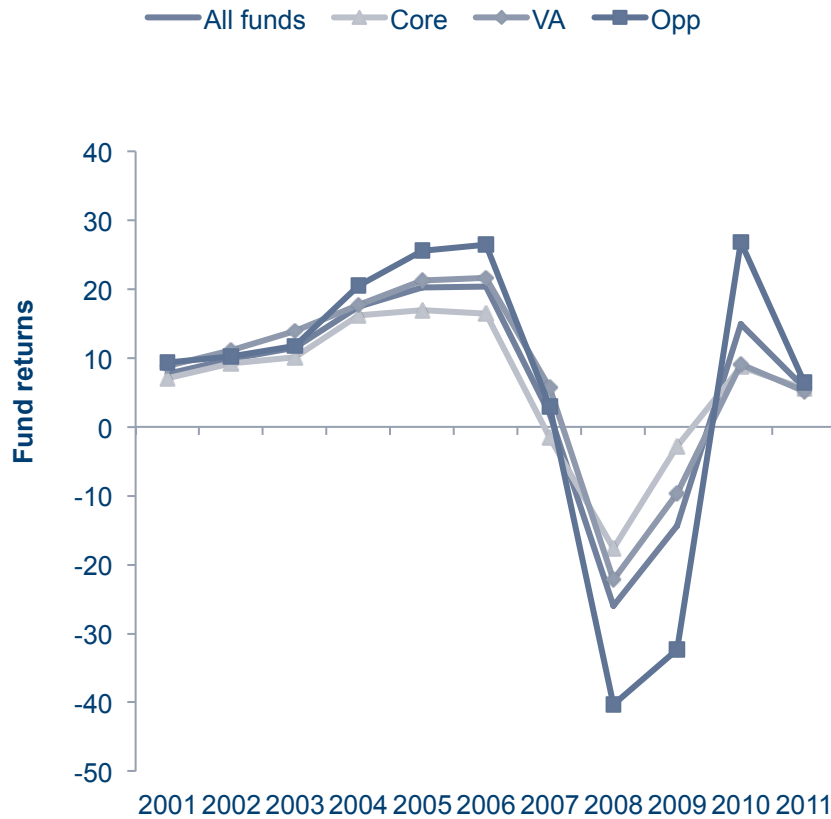# Data set: 169 firms investing in 16 global regions

## Style split
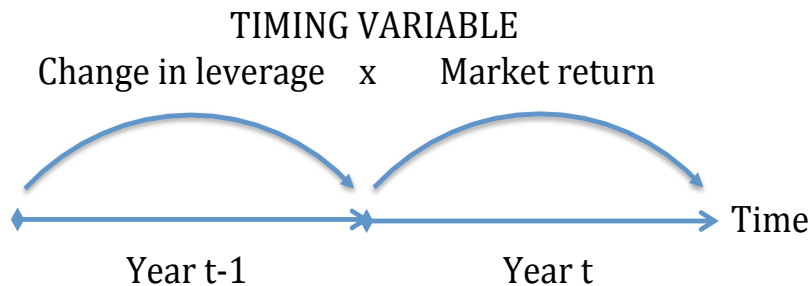


- Core
- Opportunity
- Value-add

## Sector split



- Diversified
- Industrial
- Office
- Other
- Residential
- Retail

Sample period: 2001-2011

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# Fund returns and volatility

# The timing measures

- ## Measure 1

TIMING VARIABLE

Change in leverage    x    Market return

Year t-1           Year t       Time

- ## Measure 2

  - ### 2SLS model

    - Estimate change in fund leverage over t-1 as a function of the forecast return on the market in year t

    - This is change in leverage incurred to take advantage of next year's market

    - This variable is predictor in second stage regression of excess fund returns

# Results

# Global panel for fund excess returns, 2001-2011

| VARIABLES | Market model | Leverage | Timing | L.D.Leverage 2SLS |
|---|---|---|---|---|
| Excess market return | 1.012*** | 0.974*** | 0.962*** | 0.929*** |
| Excess market return*VA | 0.187** | 0.178* | 0.153 | 0.222** |
| Excess market return*Opp | 0.830*** | 0.600*** | 0.807** | 0.858*** |
| Leverage (Debt/GAV ratio) | | -0.586*** | | |
| Leverage*VA | | 0.204 | | |
| Leverage*Opp | | -0.182 | | |
| Timing (with market forecast) | | | -0.047** | |
| Timing*VA | | | 0.016 | |
| Timing*Opp | | | 0.000 | |
| L.D.Leverage | | | | -0.559** |
| Constant | -2.495*** | 13.666*** | -4.556*** | -3.939*** |
| | | | | |
| Observations | 1,018 | 775 | 526 | 526 |
| R-squared | 0.609 | 0.648 | 0.573 | 0.499 |
| Number of firms | 154 | 148 | 138 | 138 |
| Firm fixed effects | Yes | Yes | Yes | Yes |

Standard errors (not shown) are clustered by firm. Significance is indicated as follows: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

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# Conclusion

# Summary of findings

- We find evidence consistent with the hypotheses that

  - Fund performance is almost directly proportional to the return on the underlying real estate market

  - There is evidence for systematic underperformance as measured by Jensen's alpha, possibly related to market frictions

  - Leverage cannot be viewed as a long-term strategy to enhance performance

  - Timing leverage choices to the expected future market environment does not appear to add significantly to fund excess returns