Seminar on Real Estate and Infrastructure

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Key observations

Real estate	Proposal: Maximum portfolio weight of 10% Comment: The size and composition of the market and peer group comparison argues for unlisted investment
Infrastructure	Proposal: Maximum portfolio weight of 10% in listed instruments Comment: A first initial step suggest a maximum limit of 4% and with best risk/reward in the unlisted market
Infrastructure universe	Proposal: Unlisted clean energy and emerging markets Comment: Experiences so far in clean energy have not been encouraging. Sovereign and regulatory risks.
Opportunity cost model (OCM)	Proposal: Implement the OCM for real estate and infrastructure Comment: Support the focus on underlying risk exposures and the move away from «ineffecient» benchmarks

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Criterias for building the investment portfolio of GPFG

1 Financial theory

2 Empirical evidence/ «Best practice»

3 GPFG's characteristics

Holistic view; should balance theory and best practice to the comparative advantages of the Fund

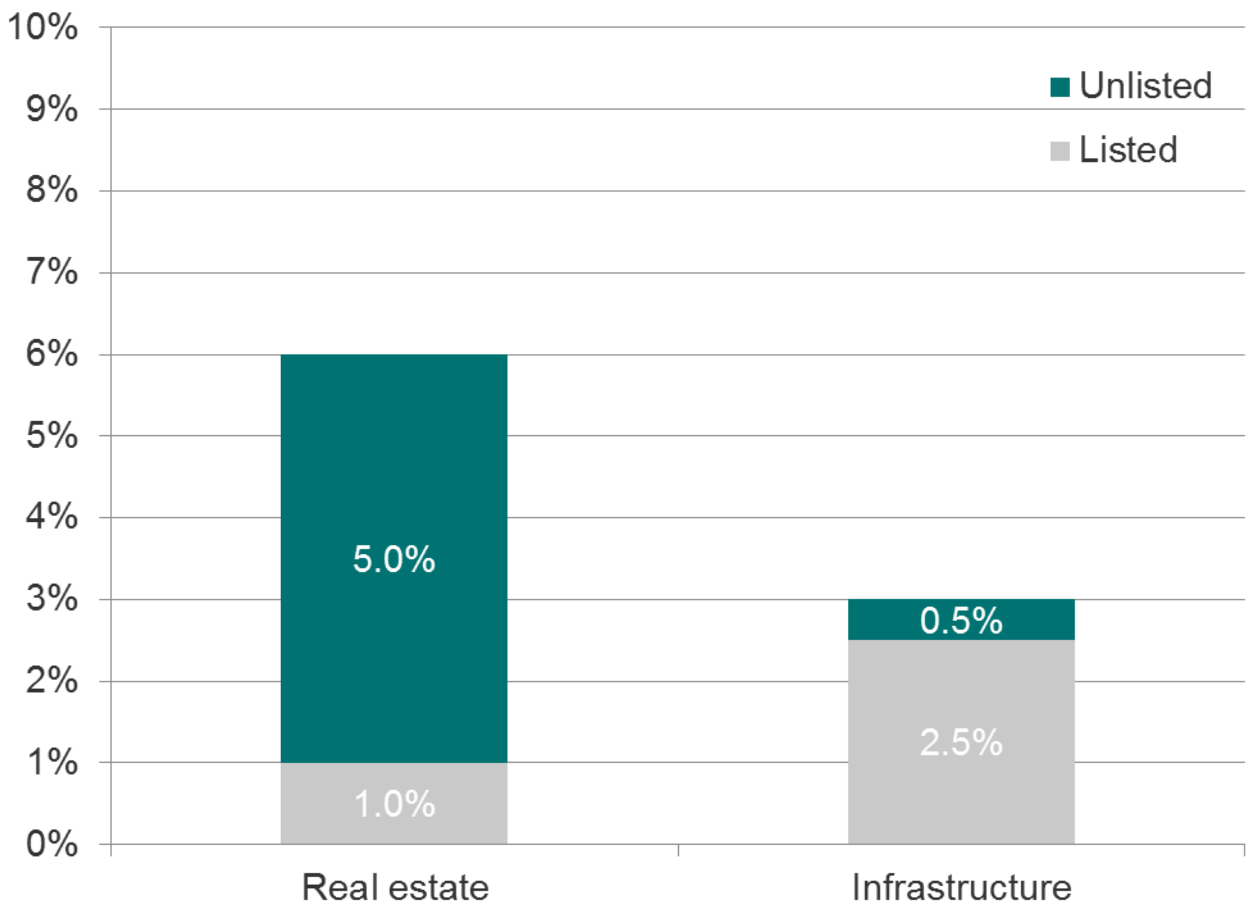
Finance theory; capital asset pricing model (CAPM)

Market portfolio

Risk vs average investor

Diversification and exposure to risk factors

Real estate and infrastructure in world market portfolio, proposed max limit of 10% in each



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Unlisted real estate investments and large investors

- There are indications that large investors outperfom smaller ones by a significant margin in real estate investments
- Gross earnings
  - Attractive partner and owner
  - No funding issues
- Cost savings
- However, report concludes that listed real estate investments are preferred, which seems to be inconsistent with these findings and the characteristics of GPFG

Peer group comparison; potential to raise allocation to real estate and infrastructure

5-year average policy mix

	GPFG	Peer avg.	Global ave.	CPPIB 2015
Equity	61%	47%	48%	50%
Fixed income	39%	33%	38%	33%
Hedge funds	0%	2%	3%	0%
Real assets*	0%	12%	7%	17%
Private equity	0%	6%	4%	
	100%	100%	100%	100%

*Includes commodities, natural resources, infrastructure
REITS and real estate. Source: CEM 2013 and CPPIB annual report 2015

- GPFG with an allocation of 3% to real estate at the end of Q3 2015
- Canada Pension Plan Investment Board (CPPIB) with an allocation of 11,5% to real estate and 5,7% to infrastructure

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Managerial view in report – chapter 8

- Potential for value creation in unlisted markets
- Direct investments provide better control and stale valuations a minor concern
- Little or no liquidity advantage in listed assets
- Concentrate on large high quality assets
  - Peer group
- Cost effective internal management

Current valutation of real estate

- A decision to increase the allocation to real estate will entail an extension of the current strategy
- Such an expansion will be undertaken over a number of years
- The asset manager is expected to take into account the availability and pricing of properties
- NBIM may use the potential to invest in REIT's to take advantage of any dislocations in the market

Unlisted clean energy infrastructure investment

- Extend investment universe to include unlisted clean energy infrastructure
- However, the initial experiences with these type of investments have been challenging
- Exposure to political/regulatory risks
- Authors sceptical about potential for risk-adjusted performance of unlisted infrastructure

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The opportunity cost model well suited to be used by GPFG

Active management measured vs liquid public markets

No need for detailed benchmark in private assets

Active management

Can be applied to all illiquid assets

Well suited to the natural advantages of the Fund

GPFG's characteristics means the fund can tolerate drawdowns better than most investors

Long investment horizon

Ability to accept volatility

Large size

Main risk; low real returns

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