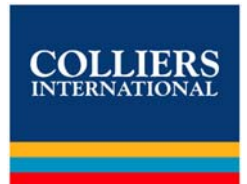


GFI Colliers

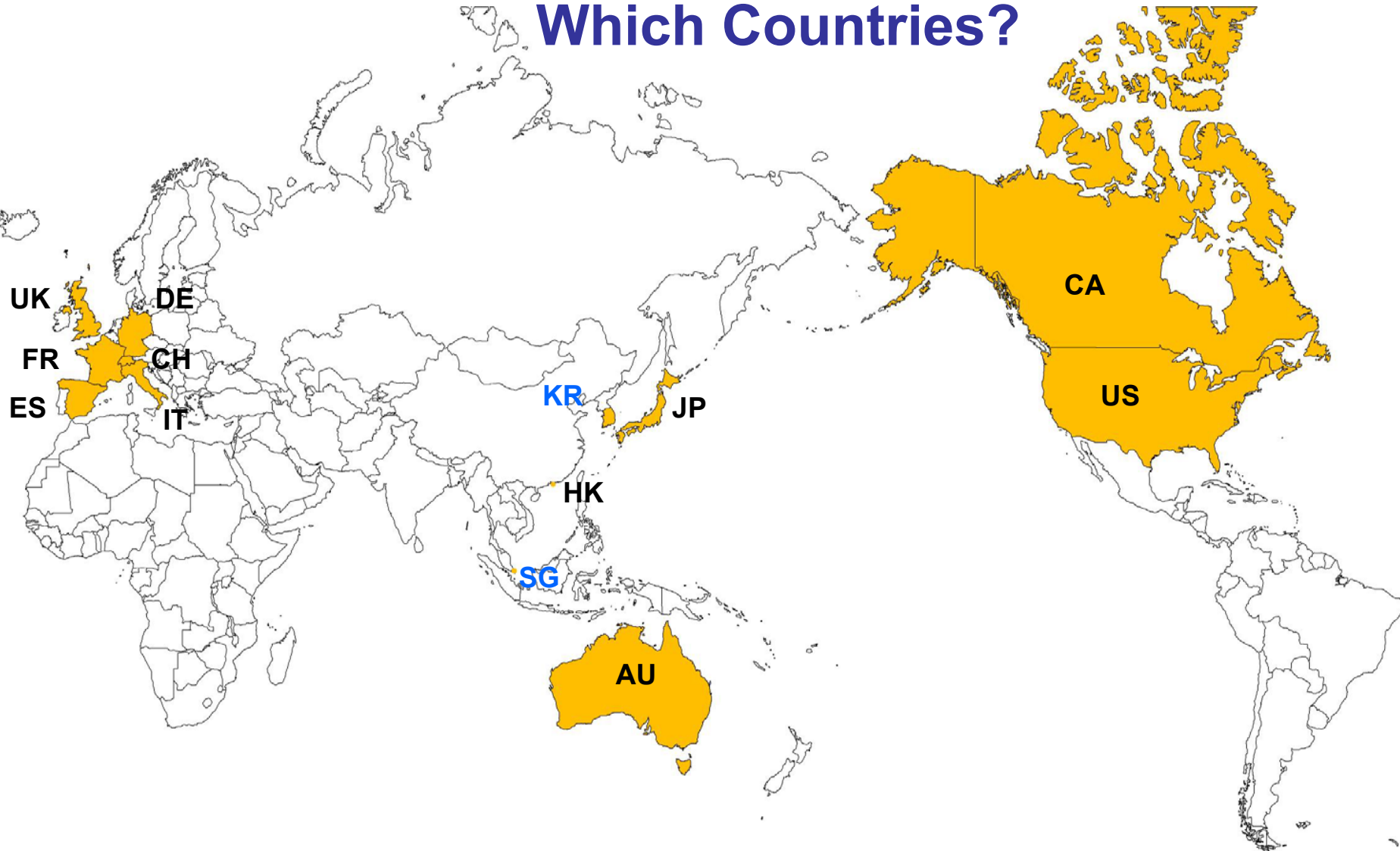
An Introduction to Property Derivatives

A Presentation by

Chris van Beek



Which Countries?



Why use a Property Derivative?

Alternative to investing in physical assets

- No stamp duty
- No agency fees
- No high legal fees
- No management costs
- No government rents / rates

Cost Saving (6-8%)

1. Quick and efficient entry
2. Hedge physical asset, while receiving rental
3. Portfolio diversification
4. Speculation (shorting impossible on the physical side)



Who will use Property Derivatives?

- Investment Banks
- Landlords / Developers
- Retail Banks
- Property Funds
- Fund of Funds
- Private Banks
- Hedge Funds
- Pension Funds
- REITs
- **Basically any institution that is or wants to get involved in real estate**



Over The Counter (OTC) Structures

- **Total Return Swap (capital value + rental yield)**
- **Price Return Swap (capital value)**
- **Option (put and call)**
- **Structured Notes (bull / bear / hybrid)**

Total Return / Price Return Swap

Bullish (before financial crisis)

“Buyer”

Long

Fixed (Premium %)

Floating (Only Positive Index Return %)

+ Floating (Negative Index Return %)

“Seller”

Hedge / Short

Bearish (negative level)

“Buyer”

Long

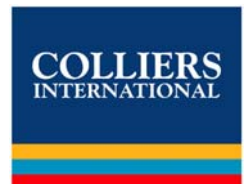
Fixed (Premium %)

Floating (Only Negative Index Return %)

+ Floating (Positive Index Return %)

“Seller”

Hedge / Short

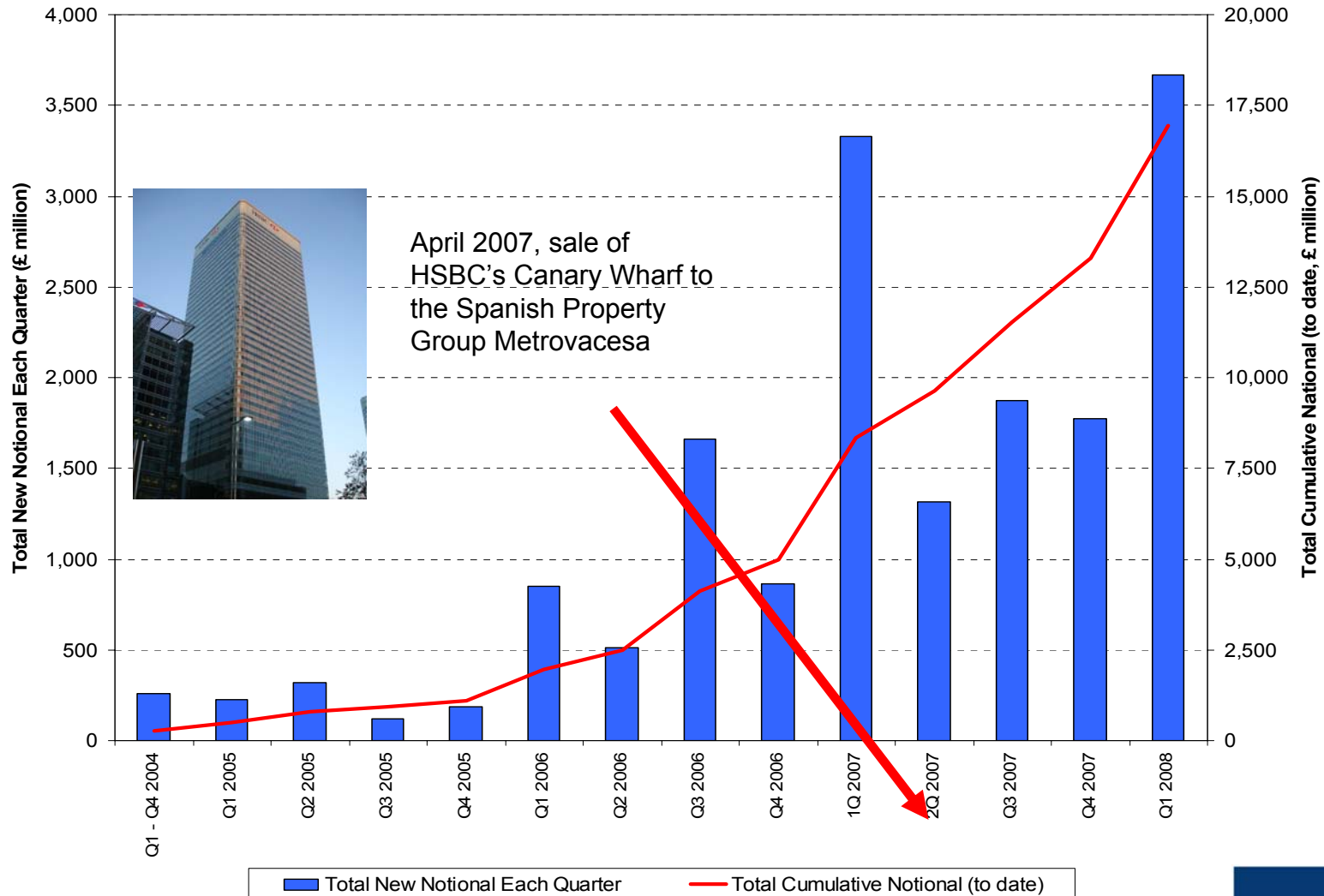


UK / Europe / US

UK	* Commercial: USD31 billion	IPD
	* Residential: USD8.5 billion	Halifax House Price Index
EU	* France & Germany: USD1.7 billion each	IPD
	* Switzerland, Spain, Italy	IPD
	* 14 other countries indices available	IPD
US	* Commercial: USD1.6 billion	NCREIF
	* Residential: USD1.8 billion	Radar Logic

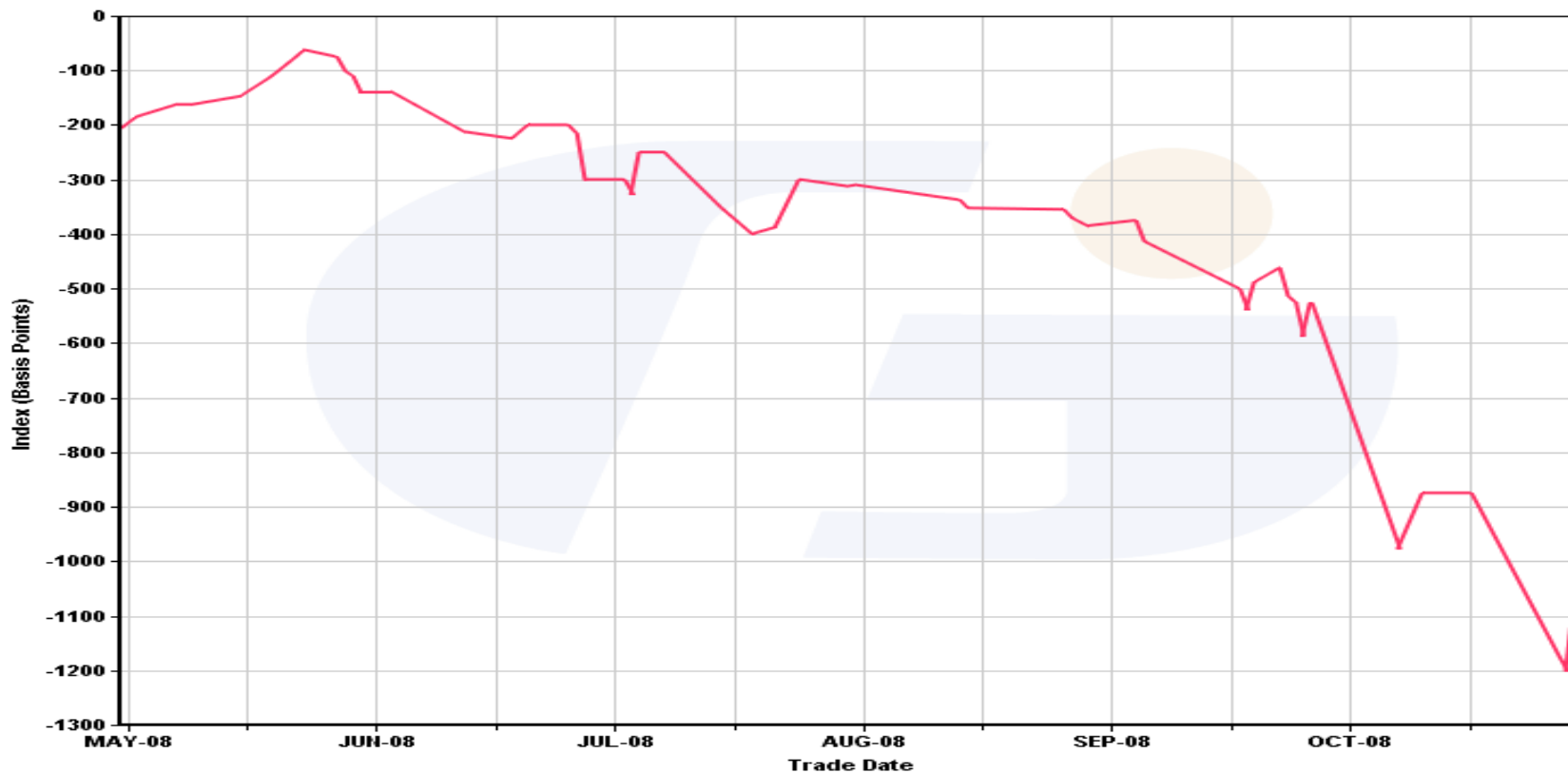


Derivatives Traded on IPD indices



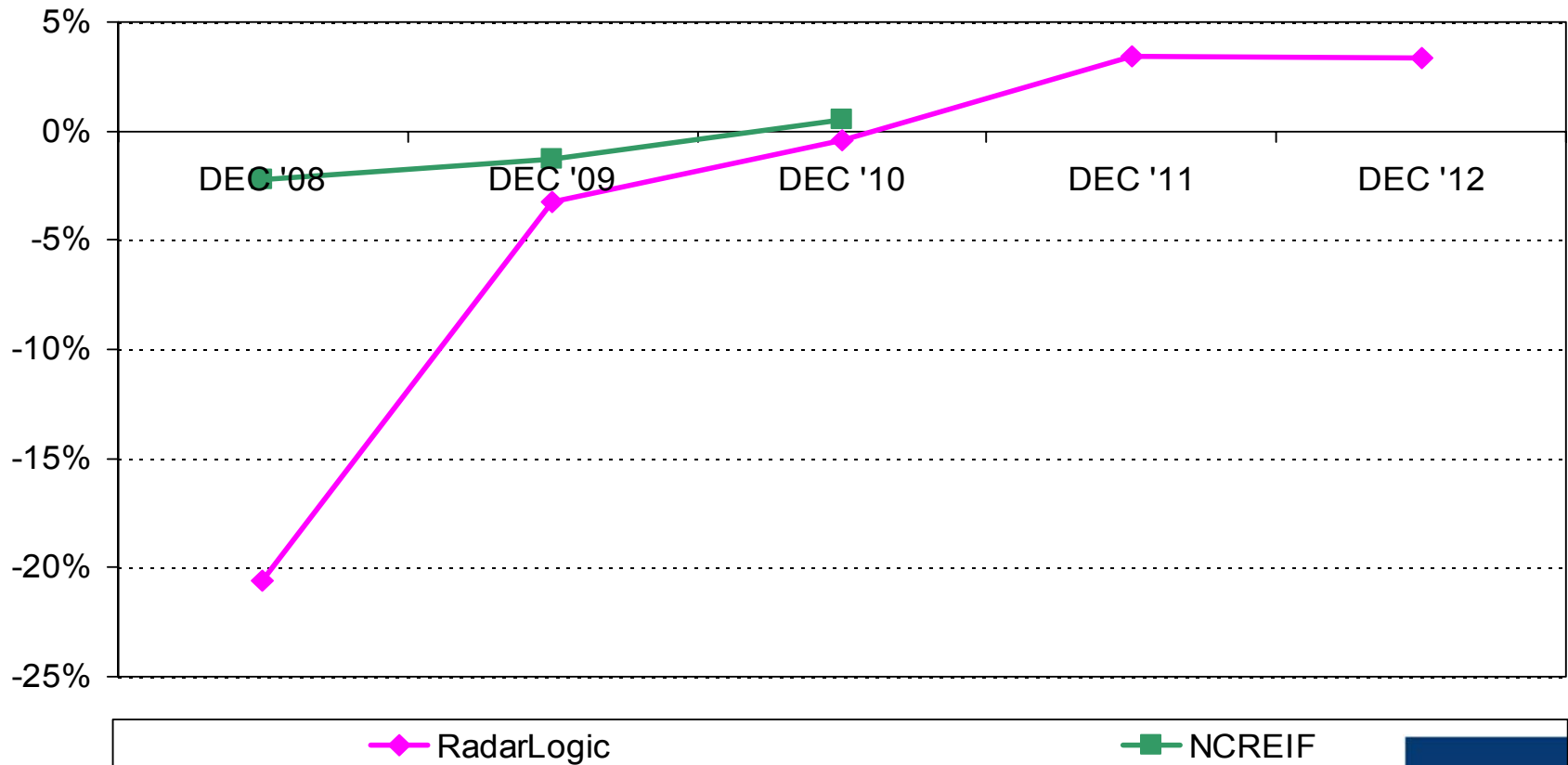
UK Comm PD Pricing – Dec 10

■ All Property, All Property Dec-10



US Property Derivative Pricing

US NCREIF (Comm.) and RadarLogic (Resi.) Forward Curve

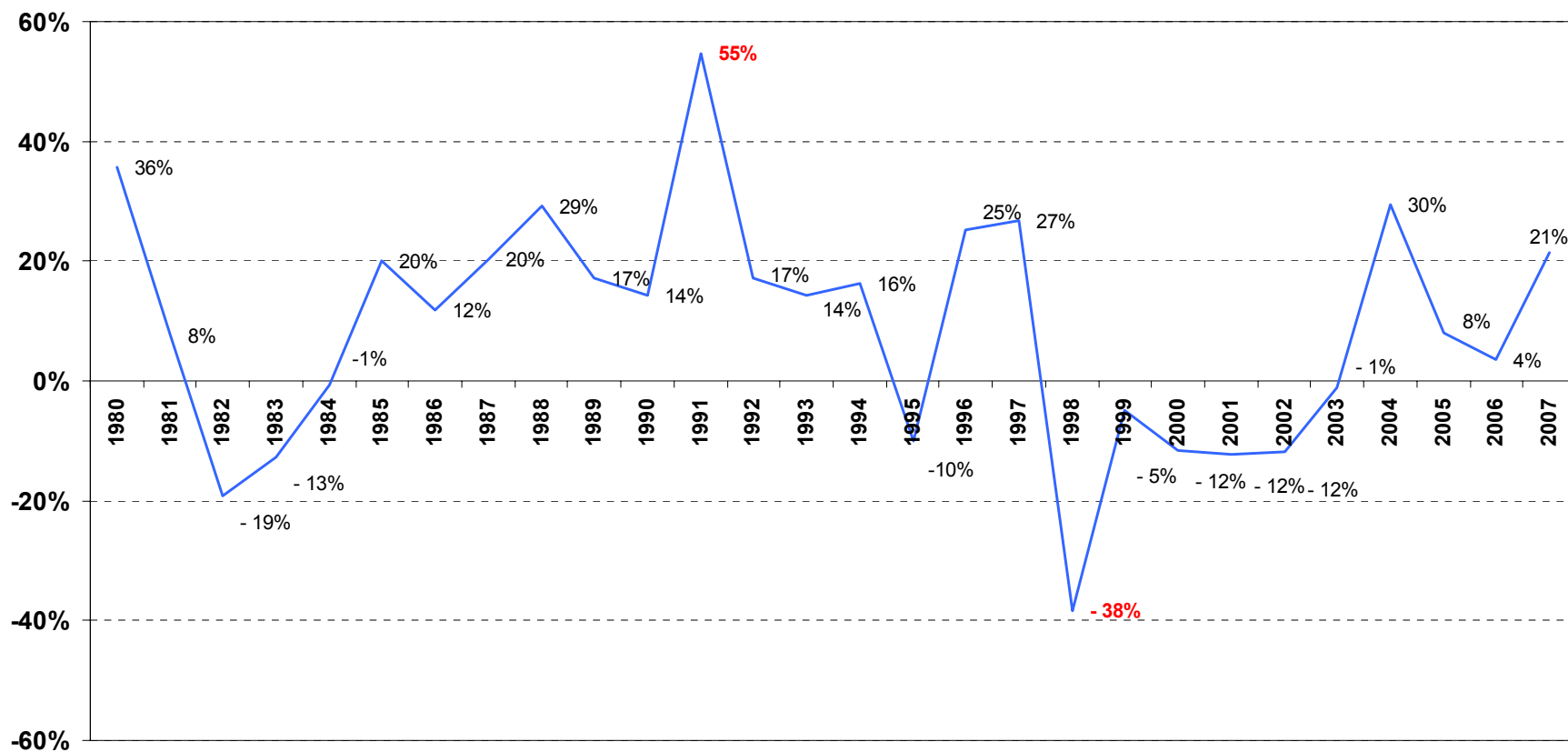


Hong Kong

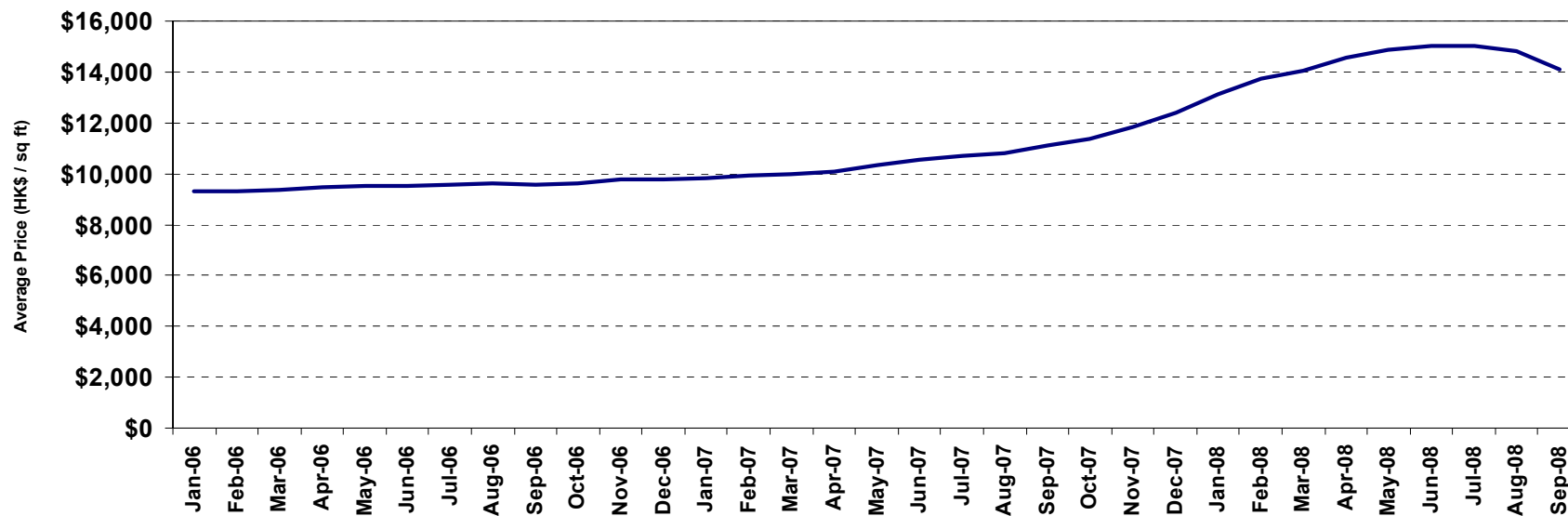
Name	HKU-REIS (HKU - Real Estate Index Series)
Provider	The University of Hong Kong
Index	ARPI (All Residential Price Index)
Sub-Index	HRPI (HK Island), KRPI (Kowloon) & NRPI (New Territories)
Coverage	All transactions in secondary residential market
Publication	Monthly
Source	Land Registry of the HKSAR
Legal	Annex A 2007 ISDA Property Index Derivatives Definitions

Historical Y-o-Y Change

1999=100



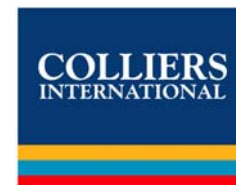
Luxury Residential Price Trend



Source: Colliers International (Hong Kong) Limited



Source: Rating and Valuation Department



Live / Indicative Pricing – Hong Kong

Index	Maturity	Bid	Offer
HKU – HRPI	Dec 08 (4 mth)	84.5%	93%
HKU – HRPI	Mar 09 (7 mth)	81.6%	90%

HKU-HRPI : The University of Hong Kong - Hong Kong Island Residential Price Index

Pricing up to 29 Oct 08



Spread - Hong Kong Price Return Swaps

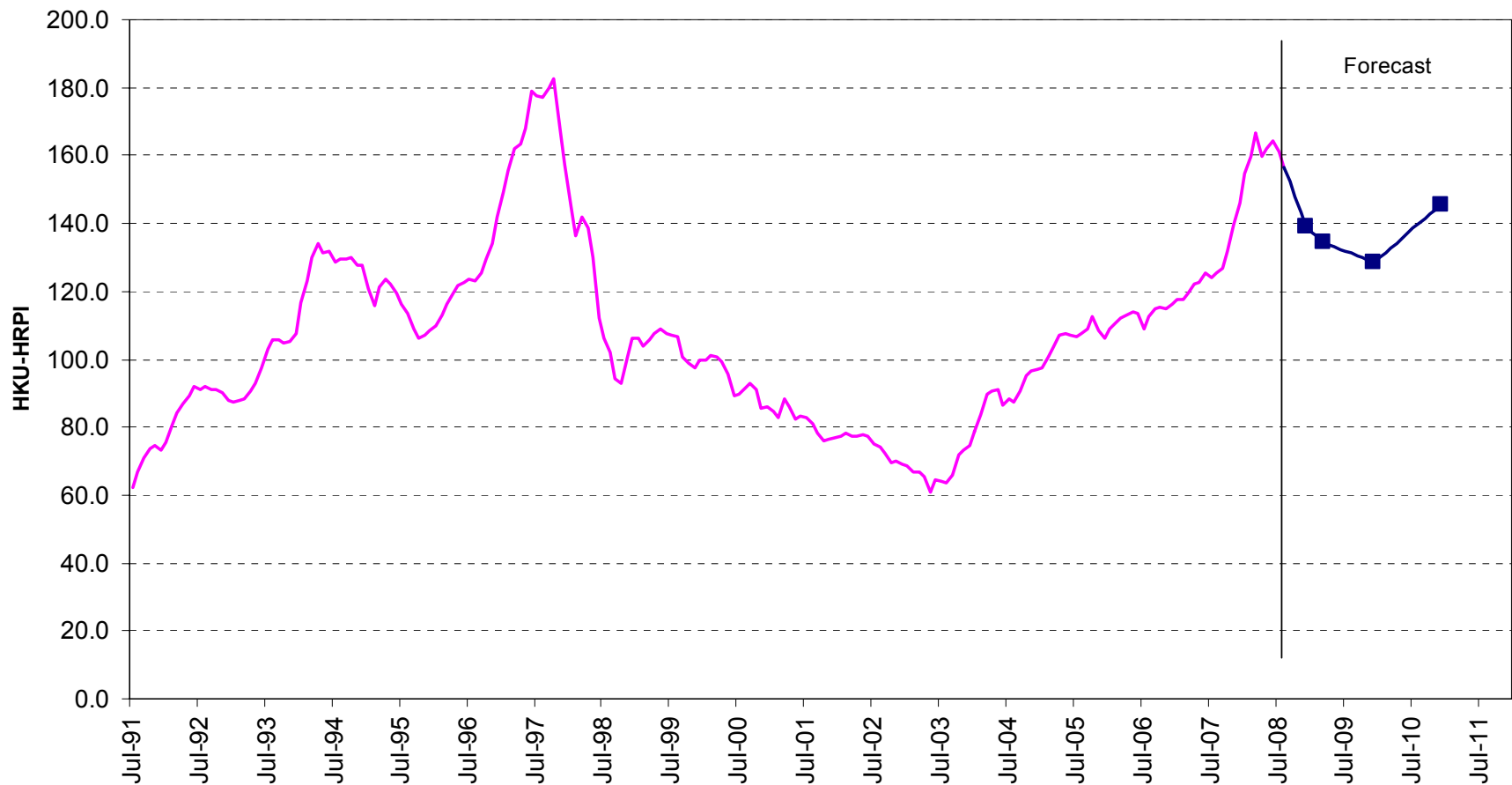
<u>HRPI DEC 08</u>	Average Bid (implied % p.a.)	Average Offer (implied % p.a.)
4Q08	- 39.4%	- 20.5%
3Q08	- 18.4%	6.4%
2Q08	2.3%	19.4%
1Q08	2.7%	22.0%
4Q07	7.2%	25.0%
3Q07	16.2%	27.2%

Spread - Hong Kong Price Return Swaps

<u>HRPI DEC 09</u>	Average Bid (implied % p.a.)	Average Offer (implied % p.a.)
4Q08	- 23.5%	0.2%
3Q08	3.7%	6.8%
2Q08	3.7%	10.5%
1Q08	5.9%	11.1%
4Q07	10.0%	12.0%
3Q07	13.0%	15.2%
2Q07	15.0%	18.0%

HKU-HRPI: Historical & Forecast

(The University of Hong Kong - Hong Kong Island Residential Price Index)



Jul 91 – Dec 10



Hong Kong

- **Tenor (swap): < 3 yrs**
- **Notional (swap): HKD50-100mm**
- **Mark to Market: banks and brokers**
- **Index: HKU-HRPI**
- **Option: put option, European style, longer tenor, bigger notional**
- **Note: bear notes, linked to HKU-HRPI**

- **Estimated combined volume of USD290 million**
- **6 Institutions licensed to trade, 5 pending**
- **Increased interest from European and Middle Eastern investors**



Correlation HKU-ARPI vs. Other Asset Classes

(July 1991 – Aug 08)

	HKU-ARPI	Hang Seng Index	Hang Seng Property Index
HKU-ARPI	1.00	0.21	0.49
Hang Seng Index		1.00	0.88
Hang Seng Property Index			1.00

Correlation HKU-ARPI vs. Other Asset Classes

(July 1991 – Aug 08)

	HKU-ARPI	Prosperity REIT	Champion REIT	New World
HKU-ARPI	1.00	- 0.66	- 0.24	0.59
Prosperity		1.00	0.004	- 0.46
Champion			1.00	0.62
New World				1.00

Changes in HK PD Market since Financial Crisis

- **Mar 08: Extreme shift buyers → sellers**
- **Prices come off tremendously**
- **Investment banks, hedge funds, property companies, private bankers**
- **Sell swaps / Buy put options**
- **Buying interest European & Middle Eastern banks and funds**
- **Buy physical: difficulty on re financing – PDs to gain exposure**
- **Sell physical: transactions drying up – PDs to hedge exposure**

Korea

- **IPD Korean Annual Property Index - Total Return Index**
- **Seoul office (68%), retail, industrial, residential and office**
- **86 individual assets – Total value KRW5,062bn (USD5.4bn)**
- **Incl. ING REIM, Koramco REITS and Trust, Kyobo Life Insurance, LaSalle Investment Managers, PRUPIM, RREEF, Samsung Life Insurance and Union Investment**
- **No property derivative deal as yet**

Korea

- **Residential transaction price data maintained since January, 2006 by Ministry of Land, Transport and Maritime**
- **A number of small scale Korean residential repeat sales price indices already in the literature (e.g. Yun Woo Park et al.)**
- **Case-Schiller type indices expected to be available for PD contracts**
- **OTC trading and exchange based trading of PD contracts feasible in a near future**

Australia

Commercial Market:

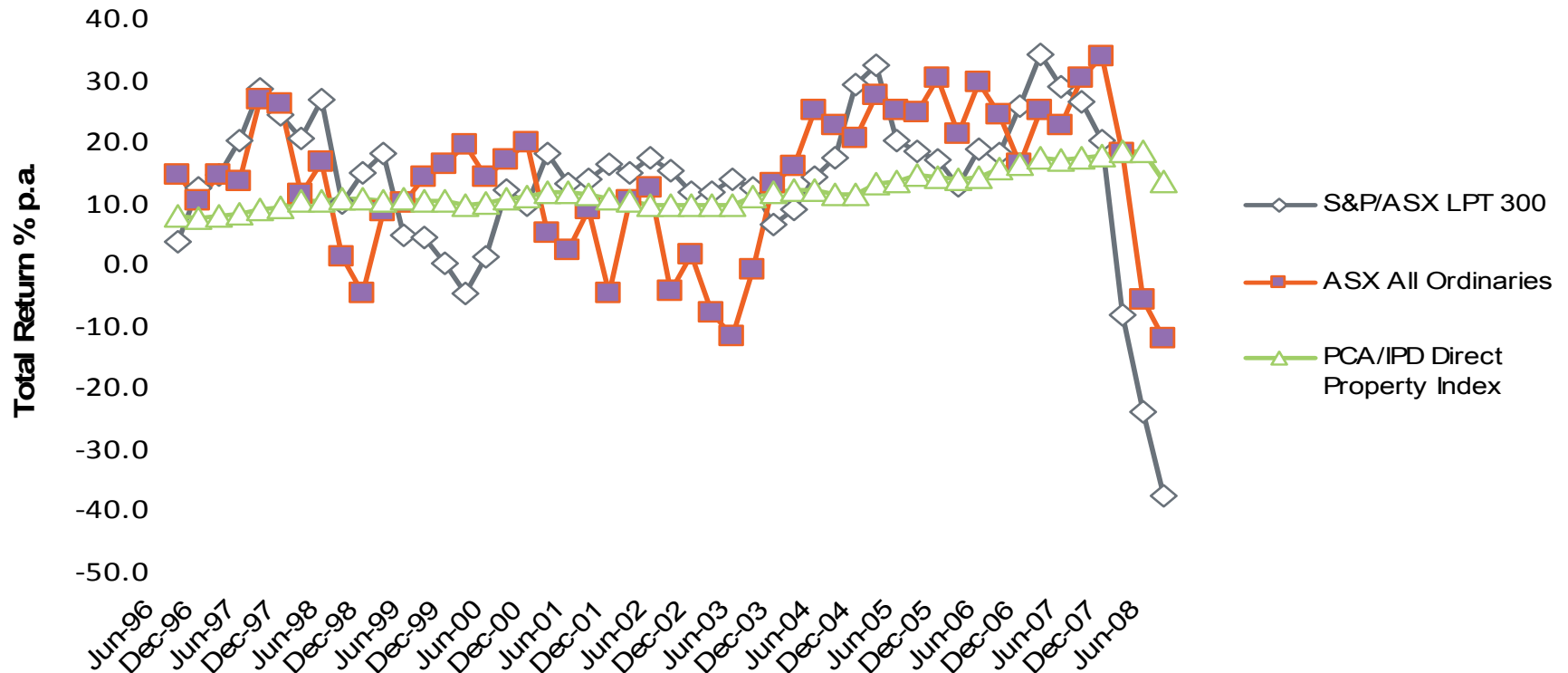
- **PCA/IPD**
- **First deal between ABN AMRO and Grosvenor**
- **Office, retail, industrial and composite (All Property Composite Index)**
- **Total Return Swap**
- **80+ sub-indices**

Residential Market

- **RP Data / Rismark**
- **85% of residential properties in AUS & NZ**
- **Suburb, postcode, capital city and state in Australia**



Australian Asset Class Returns



Live / Indicative Pricing – Australia

PCA / IPD – Commercial	Maturity	Bid (p.a.)	Offer (p.a.)
IPD All Property	Dec 07 - Dec 08	- 3.5%	- 0.2%
IPD All Property	Dec 07 – Dec 09	- 4.7%	0.0%
IPD All Property	Dec 07 – Dec 10	- 3.0%	0.5%
IPD Sydney Office	Dec 07 – Dec 10	- 5.0%	1.0%

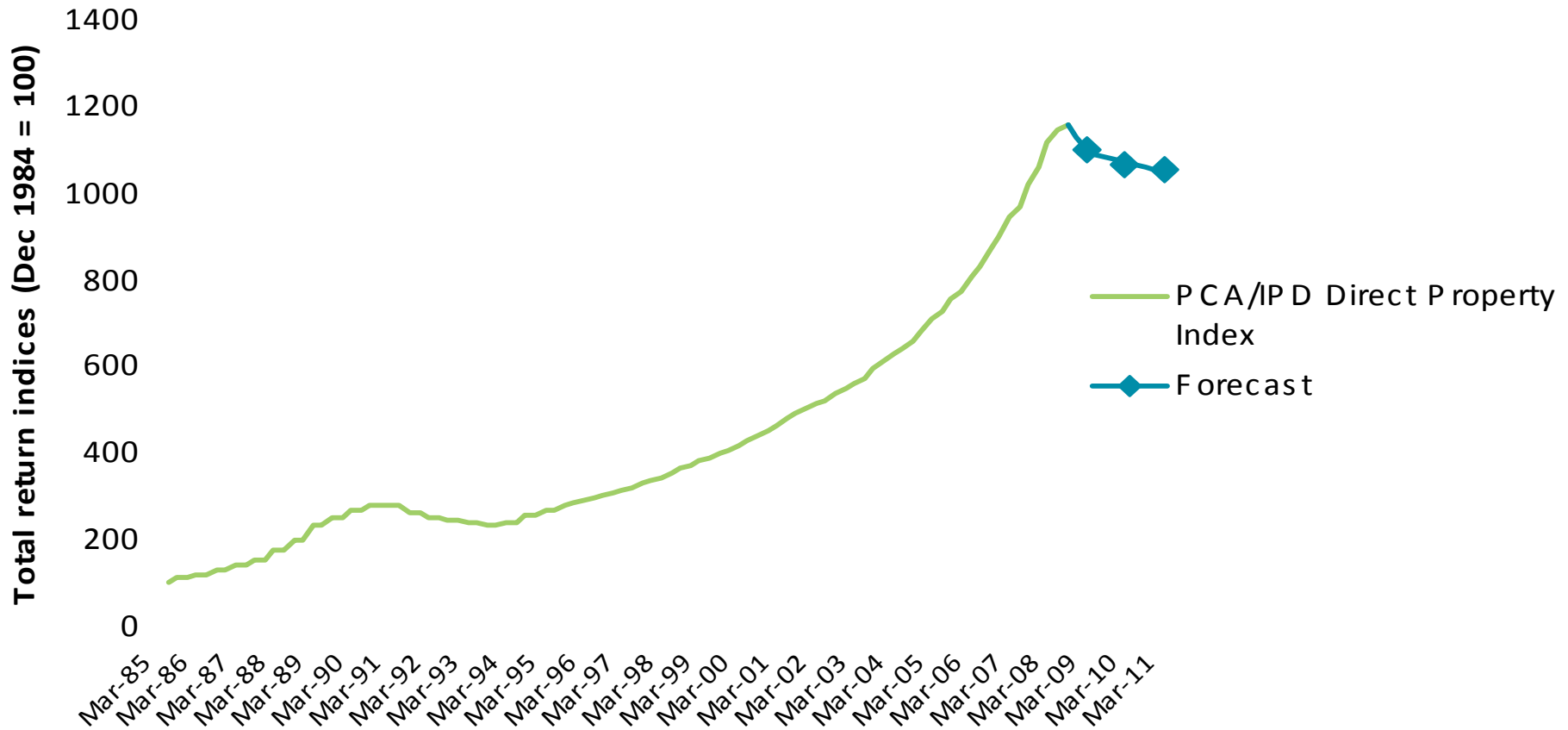
RPData / Rismark – Resi	Maturity	Bid	Offer
National Dwellings	Dec 07 - Dec 09	93.0%	99.7%
National Dwellings	Dec 07 – Dec 10	94.5%	101.2%
National Dwellings	Dec 07 – Dec 11	102.6%	110.8%



Pricing up to 29 Oct 08



Australia – Historical & Forecast



Japan

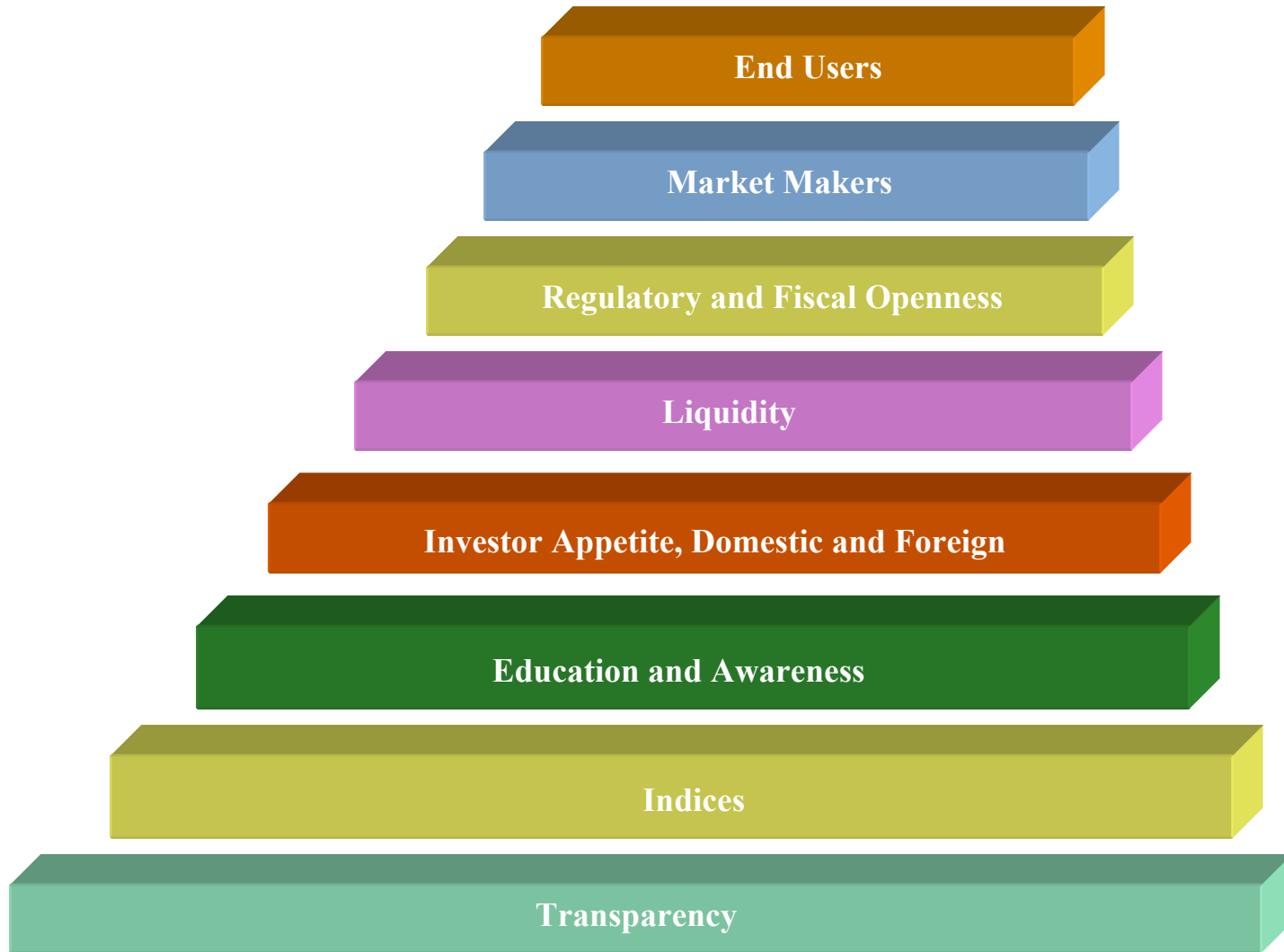
- **IPD Japan Monthly Indicator**
- **J-REIT assets**
- **1st deal between RBS and Grosvenor**
- **Japanese property derivative working group established**

Singapore

- **Residential Index**
- **Transaction based**
- **Backed by all major Singaporean institutions**
- **Commercial Index**



Korea PDs – What Next?



Information, Indices, Historical Data etc

- **BBG: GCPD <go> or HKRE <go> 9 <go> / 15 <go>**
- **Reuters 3000Xtra: 0#HKUREIS or HKUREIS/INFO**
- <http://www.gfigroup.com/markets/commodities/Property-Asia.aspx>
- www.colliers.com/hongkong



Thank you

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