

ECB Workshop on the Handbook on Commercial Property Price Indicators

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Frankfurt

29th September 2014



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Agenda

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- IPD / MSCI Introduction
- History of Index Development
 - Transaction Linked Indicators
 - Valuation Based Indicators
- Current Position
- Future Development



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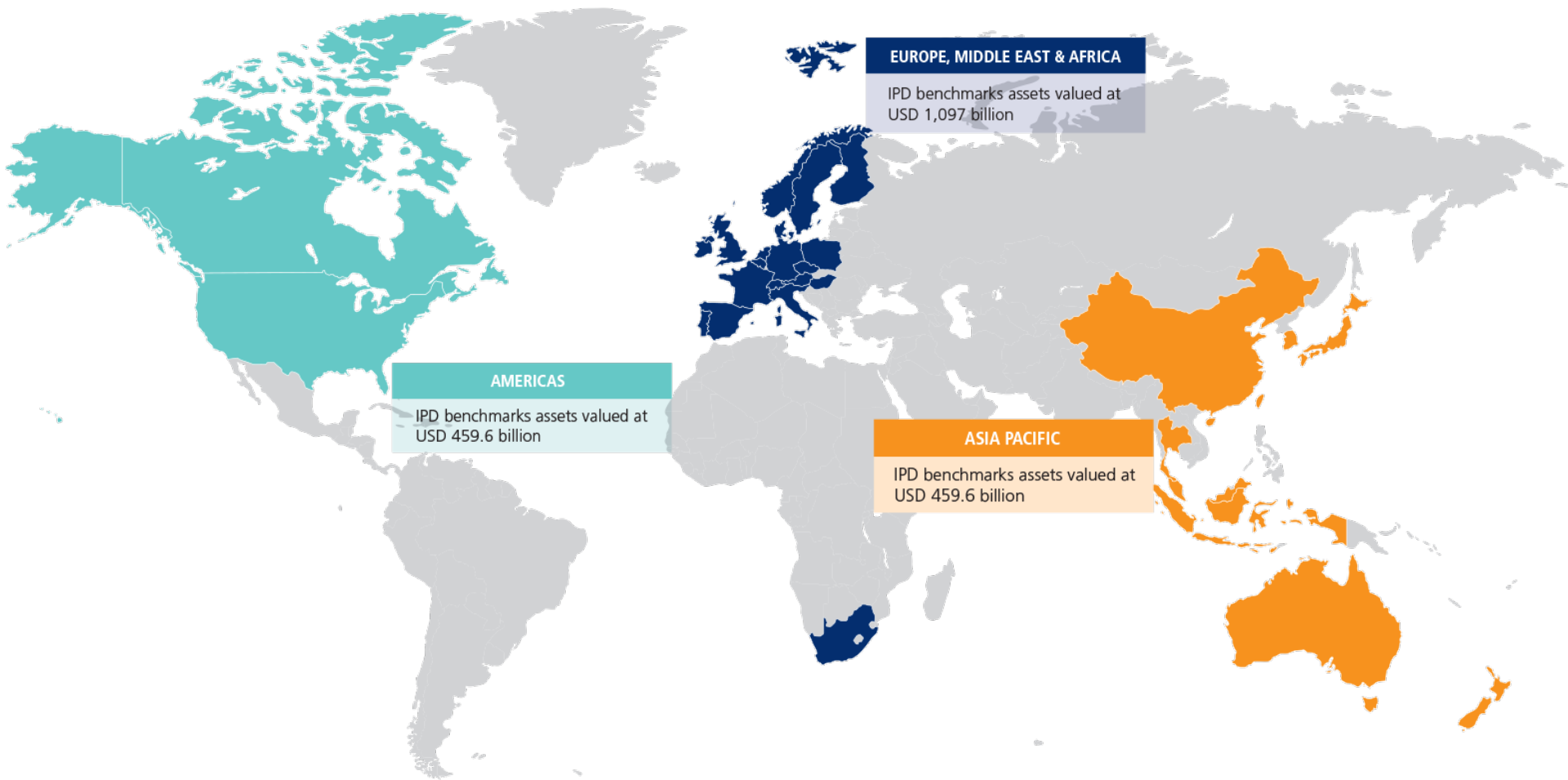
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IPD is a subsidiary of MSCI Inc., a leading provider of investment decision support tools to investors globally.



IPD Global Coverage

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IPD Data Collection & Usage

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Confidentiality and Convenience

Portfolio Data Collection

Strict Confidentiality maintained

Our data is sourced from valuations, property management, fund management, and accounting systems

Independence and Accuracy

Validation & Aggregation

Audit, verification, client sign off and aggregation

Analysis in market standardised measures by over 200 expert analysts

Flexibility and Customization

Portfolio Analysis Service

Sophisticated analysis

Online interactive reporting tool

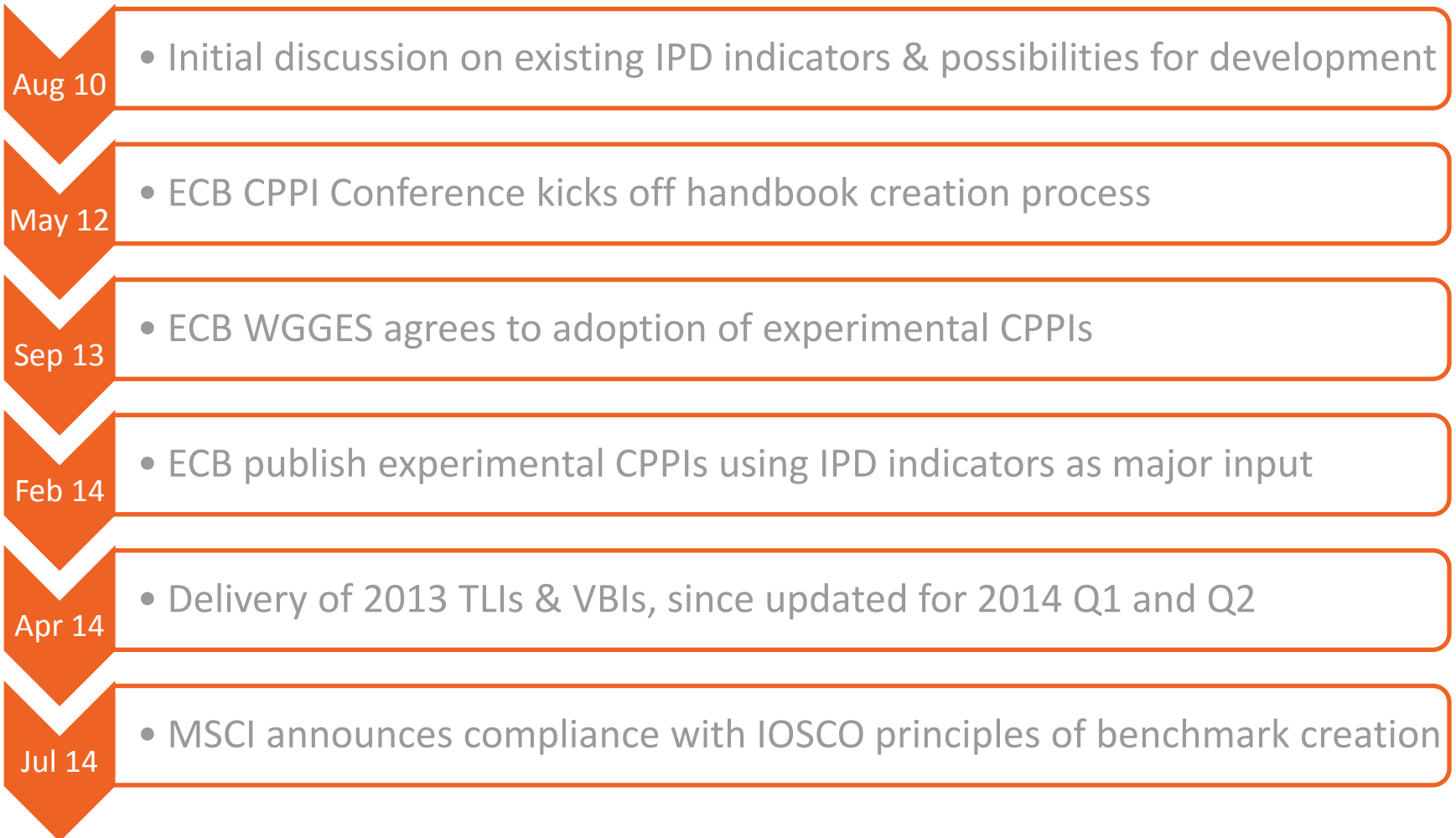
Assists you to understand your portfolio performance

- **Improved decision making.** The reports for all stages of the investment process.
- **Track record and capital raising.** Reporting provides insights into the management track record. The results can be used to support new and ongoing capital raising initiatives.
- **Investor reporting.** IPD's clients use PAS to report to their clients. Global investors ask for this analysis from their managers.
- **Risk management.** Assessing exposure to locations, property types, and sectors. Service monitors a range of risks.
- **Cost saving/regulatory reporting.** For many clients we are finding ways of helping them reduce their costs.



IPD Index Development for ECB

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Starting Point of Development

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Valuation Based Indexes

- Based on professional external valuations
- Compiled for investment management purposes

Issues

- Market smoothing & Lagging
- Lack of synchronisation of frequency
- Differences in market priorities & approaches to valuation



Transaction Based Indexes

- Based on known values of asset sales
- Compiled by public organisations from data collected for taxation reasons, ... and by private organisations for commercial purposes

Issues

- Transaction volumes can be very low in certain markets at certain times of the market cycle
- Assets are often large & heterogeneous so tend to skew results
- Asset attributes are poorly documented which is a challenge for hedonic modelling



Development Work – Transaction Linked Indicators

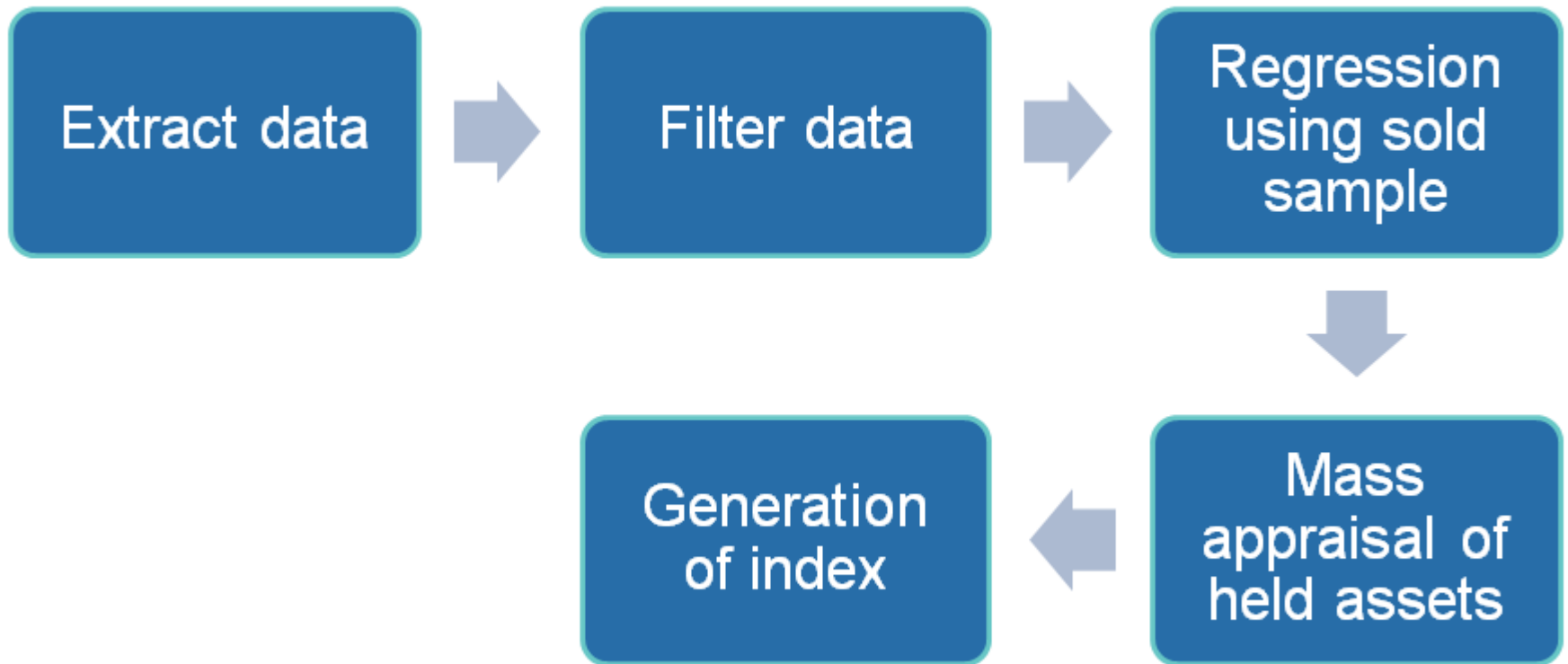
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- Quasi-hedonic, hybrid indicator which adds transaction information to valuation information
- Conventional hedonic modelling views real estate prices as a function of various asset characteristics:
Price = α + β age + β floor space + + ϵ
- Valuations should capture differences between assets in a single measure:
Price = α + β valuation + ϵ
- Can then use coefficients to mass appraise large, consistent sample of assets & generate hybrid market price series using non-traded assets



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Transaction Linked Indicators - Methodology





Development Work – Valuation Based Indicators

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- Standard IPD Valuation Based Indexes are constructed
 - on the largest sample available each period
 - including capital expenditure & receipts
 - on valuation frequencies widely adopted within national market
- Continuous Coverage Valuation Based Indicators developed
 - on sample held consistent for four consecutive quarters
 - excluding capital expenditure & receipts
 - on a quarterly basis

IPD CONTINUOUS COVERAGE (VBI) PRICE MOVEMENT INDICES														
CAPITAL GROWTH MEASURES EXCLUDE ALL CAPITAL EXPENDITURE AND RECEIPTS														
		Year 1				Year 2				Year 3				
Quarterly Reports - restricted to assets held as standing investments over each preceding 12 month holding period														
Supply	20 qtrs	q1	q2	q3	q4	q1	q2	q3	q4	q1	q2	q3	q4	
Supply	Q4	4qs to q4												
Supply	Q1		4qs to q5											
Supply	Q2			4qs to q6										
Supply	Q3				4qs to q7									
Supply	Q4					4qs to q8								
Supply	Q1						4qs to q9							
Supply	Q2							4qs to q10						
Supply	Q3								4qs to q11					
Supply	Q4									4qs to q12				



Current Position

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Country	VBI	VBI CC	TLI	VBI Start Date
Austria	✓ Annual	✓ Quarterly		2004
Belgium	✓ Annual	✓ Quarterly		2005
Czech Republic	✓ Annual	✓ Quarterly		2005
Denmark	✓ Annual	✓ Quarterly	✓ Quarterly	2000
France	✓ Biannual	✓ Quarterly	✓ Quarterly	1998
Germany	✓ Annual	✓ Quarterly	✓ Quarterly	1996
Hungary	✓ Annual	✓ Quarterly		2005
Ireland	✓ Quarterly	✓ Quarterly	✓ Quarterly	1984
Italy	✓ Biannual	✓ Quarterly	✓ Quarterly	2003
Netherlands	✓ Quarterly	✓ Quarterly	✓ Quarterly	1996
Norway	✓ Annual	✓ Quarterly	✓ Quarterly	2000
Poland	✓ Annual	✓ Quarterly		2005
Portugal	✓ Annual	✓ Quarterly		2001
Spain	✓ Annual	✓ Quarterly		2001
Sweden	✓ Annual	✓ Quarterly	✓ Quarterly	1983
Switzerland	✓ Annual	✓ Quarterly	✓ Quarterly	2003
UK	✓ Quarterly	✓ Quarterly	✓ Quarterly	1981



Current Position – Improvements in last 2 years

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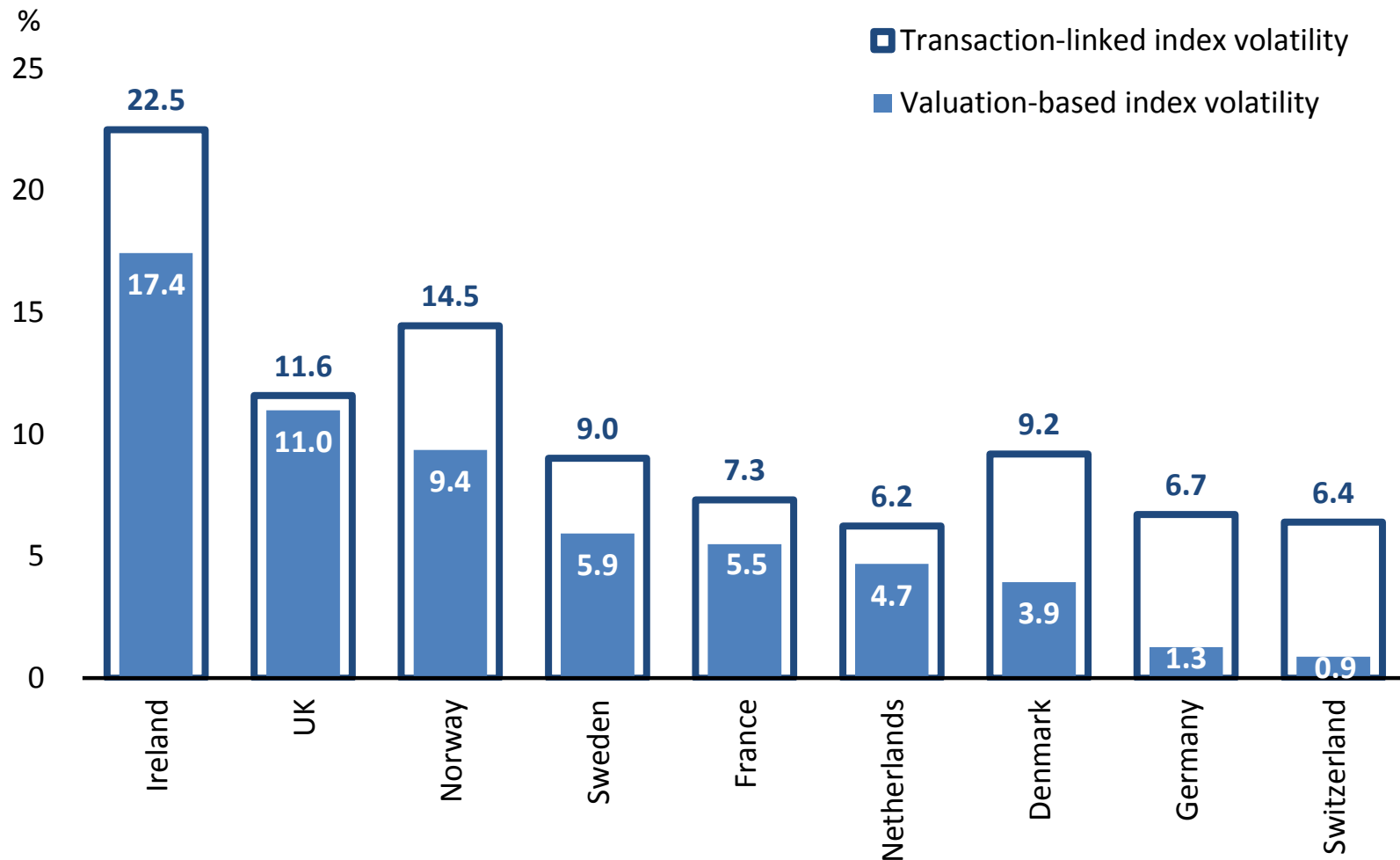
- Development of VBI Continuous Coverage series
- Increase in time series length
 - An extra year every year!
 - Longer TLI histories
- TLI added for Italy
- Growth in sample sizes
- Improved market size estimates for composites
- IOSCO compliance



Results – TLI & VBI Volatilities

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Valuation and transaction based volatility, 10 years to end 2013

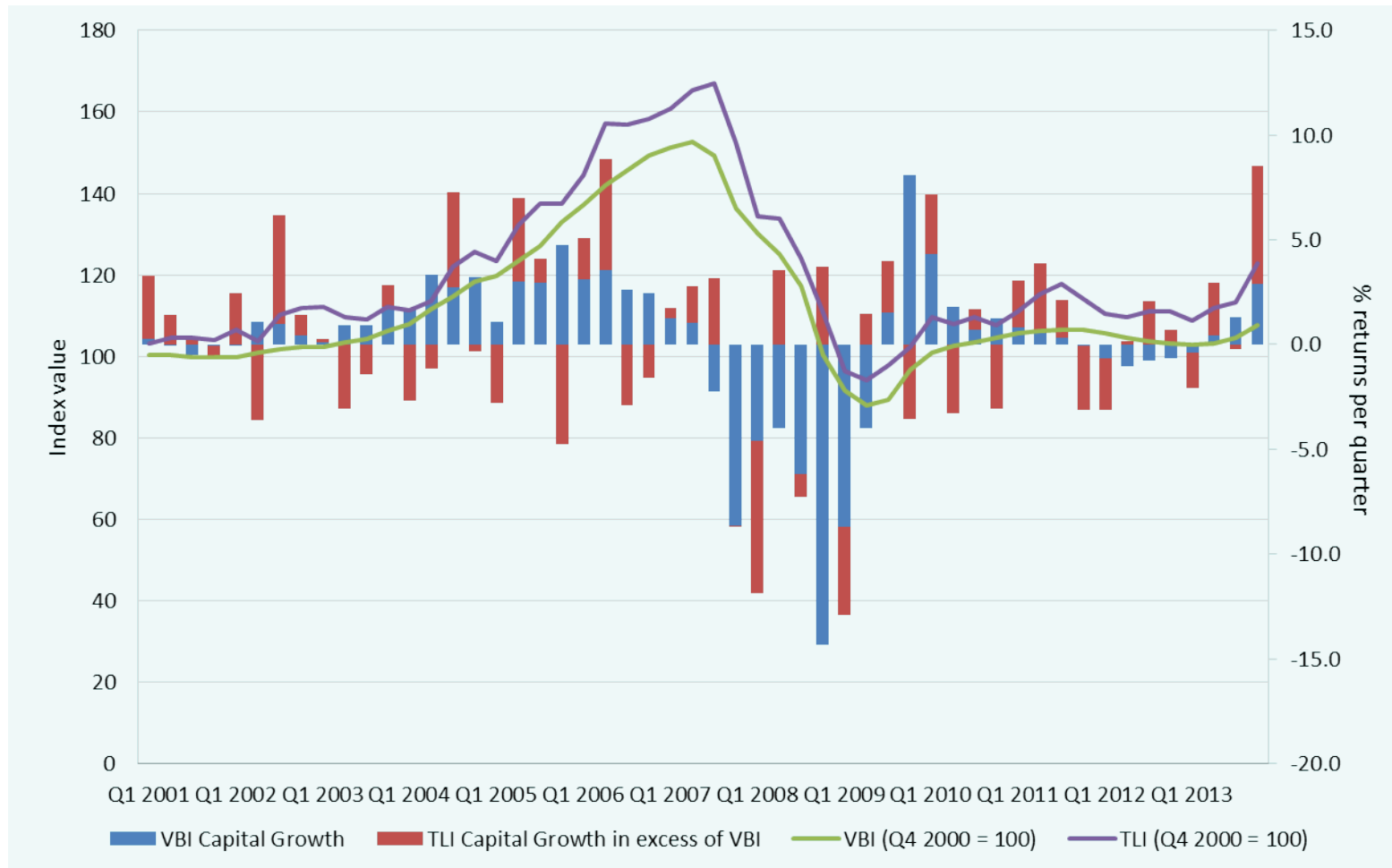


Source: IPD



Results - UK

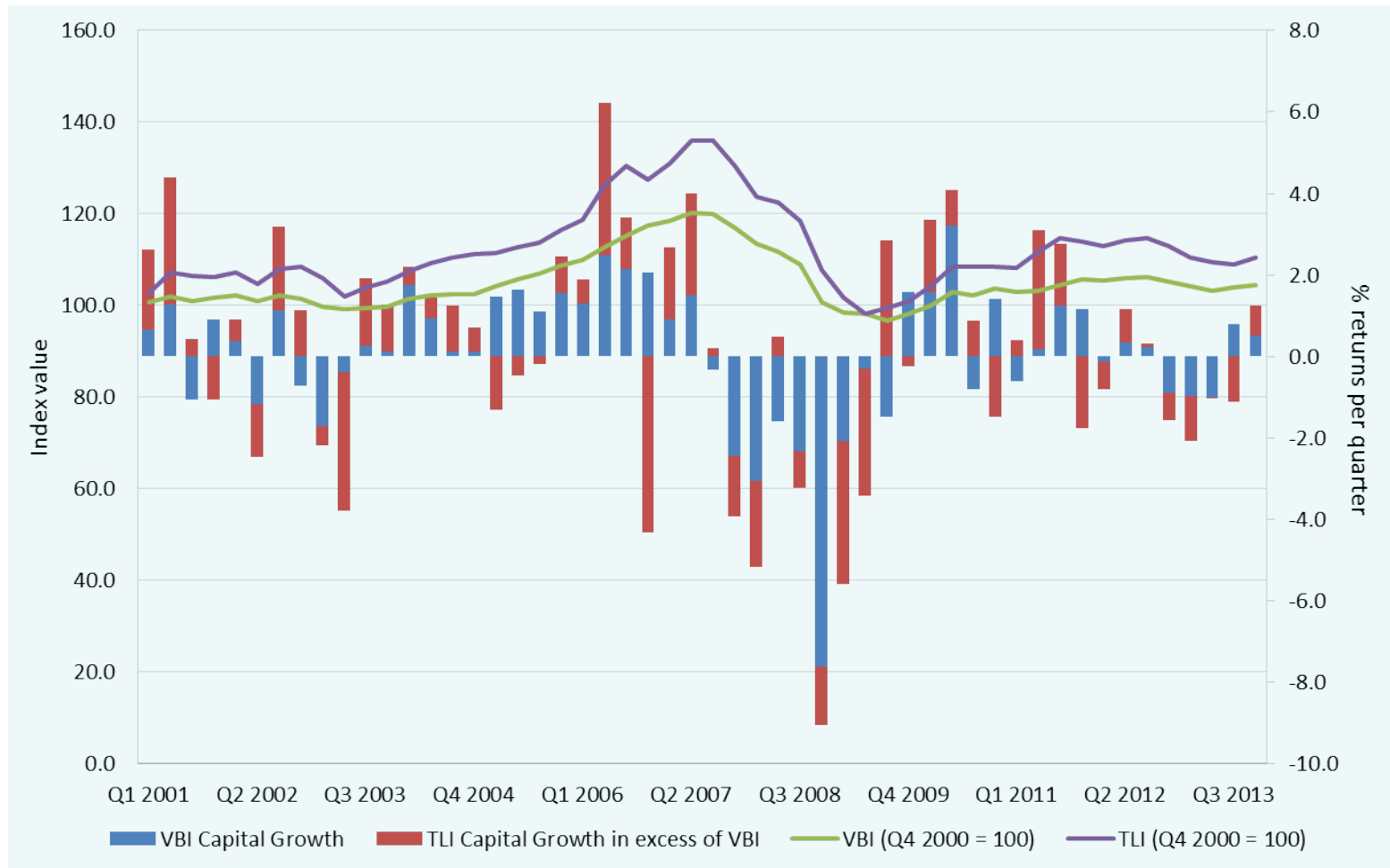
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Results – Pan Europe

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Future Developments

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Improved Data Coverage & Usage

- TLI market coverage expansion
 - Australia, Canada, USA, Global composite
 - Test existing European markets with VBIs for TLI feasibility each year
- TLI sample size increase
 - Addition of non-domestic assets across Europe
- Quarterly VBI expansion
 - Complement interpolated series on large sample to quarterly valued series on smaller sample



Standardisation & System Improvement

- IPD Global Data Standards
 - Introducing global consistency on data definitions & methodologies
- Enhanced IT infrastructure & data analytics capability
 - New calculation engine will allow for more flexible data analysis
- Faster publication dates
 - Improved process should lead to shorter delivery deadlines

Appendix

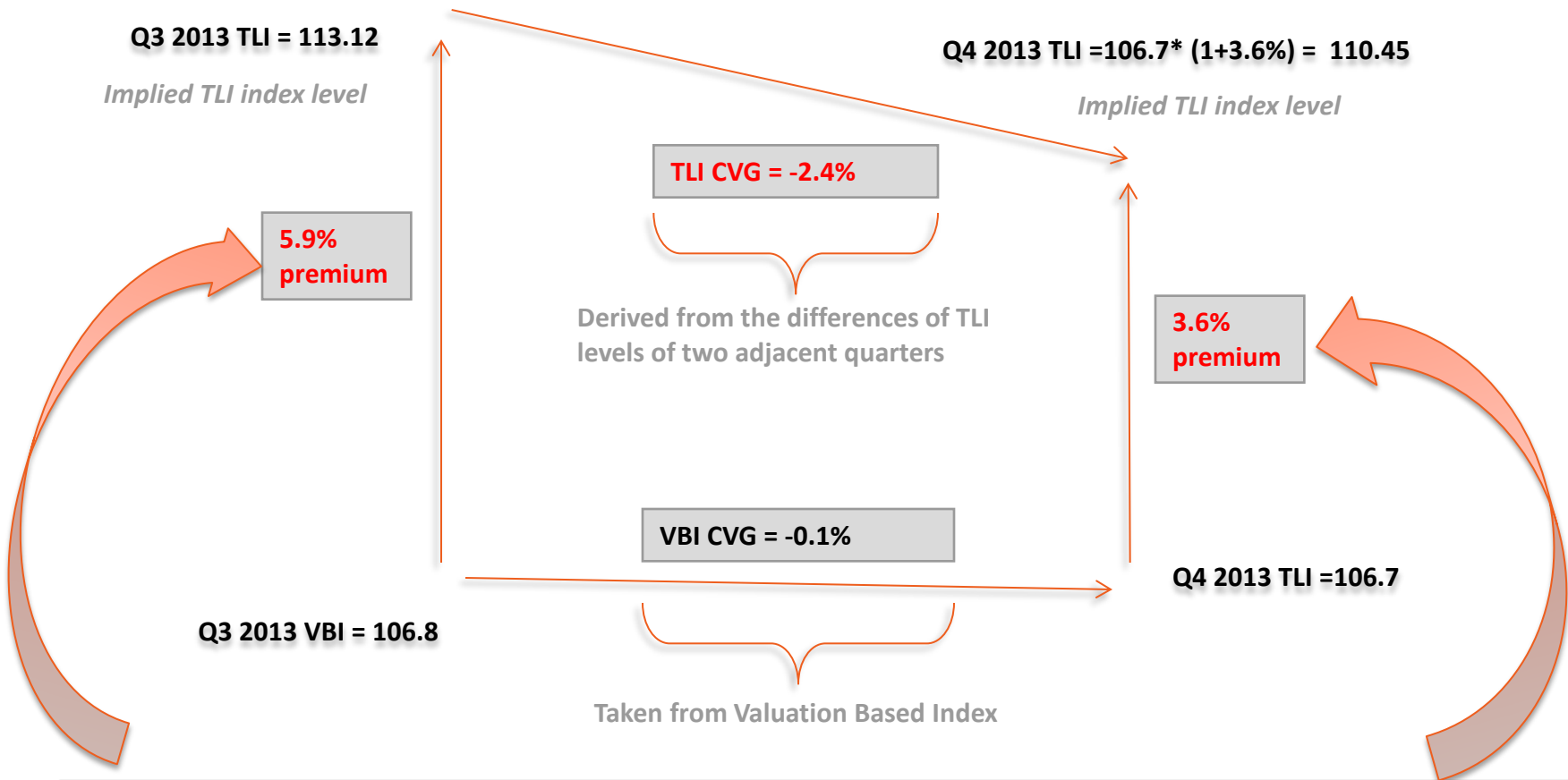


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Transaction Linked Indicators - Methodology

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- An econometric model estimates the premium of the sale price over valuation for the sold properties in that quarter
- Assume the premium would be the same for the unsold properties had they been sold in that quarter



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