

Panel: Ongoing Initiatives

Moderator: Dr Robin Goodchild MA FRICS, Special Adviser, Global Research & Strategy and Visiting Professor, University of Aberdeen Business School









Real Estate Derivatives Summit: Ongoing Initiatives Panel

Moderator: Dr Robin Goodchild MA FRICS, Special Adviser, Global Research & Strategy and Visiting Professor, University of Aberdeen Business School

Panellists: Jon Masters, Chairman of Property Derivatives Interest Group (PDIG)

Stuart Heath, Eurex Equity & Index Product R&D

Will Robson, Director of Research, MSCI



Jon Masters Chairman Property Derivatives Interest Group (PDIG)



GFC Impact on the Market

- Total Return Swaps
- Falling Trade Volumes
- Weapons of Mass Destruction
- Changing Regulation to Reduce Systemic Risk:
 - 1. Keep a Register of all Trades
 - 2. Remove Counterparty Risk
 - 3. Offer Transparency



Post GFC – New Market Developments

- Exchange Traded Futures over the Eurex Exchange
- End User to End User Market Developing
- Property Funds, Hedge Funds, Pension Funds, Life Funds, Insurance Funds, Multi Asset Funds
- Strategic Risk Management Trades
- Sector & Segment Switch Trades



PDIG Initiatives

- Series of Educational Papers
 - 1. Property Future Contracts; An Introduction
 - 2. Managing Commercial Property Risk; A Different Perspective
 - 3. Soon to be Released; Paper Engaging the Consultants
- Round Table Discussions
- FCA Discussion Paper

Eurex – the international derivatives exchange

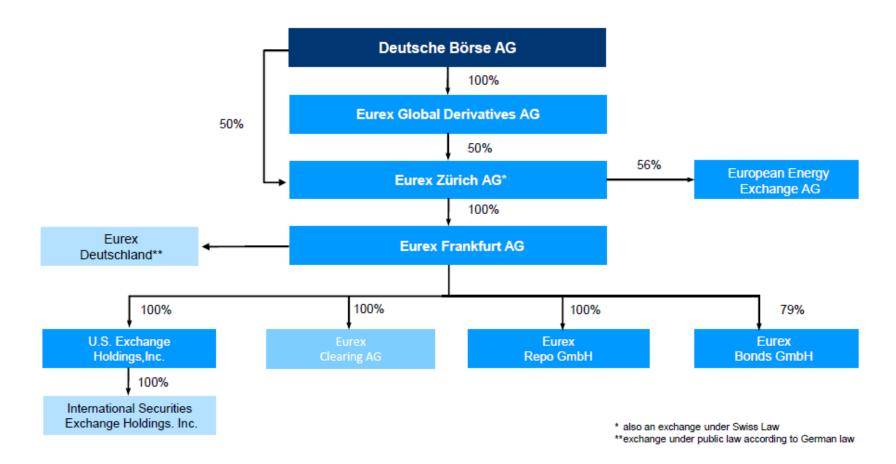
September 2017





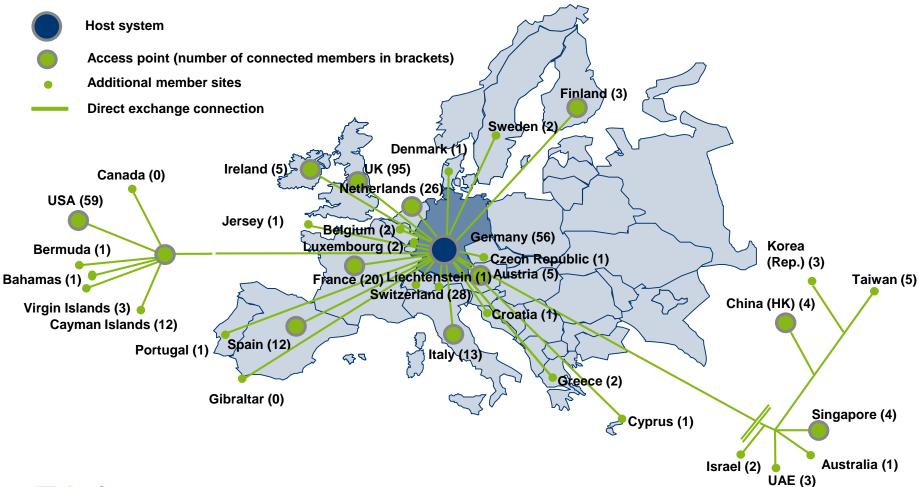
Ownership Structure

Eurex Clearing is a wholly owned integral part of Deutsche Börse Group



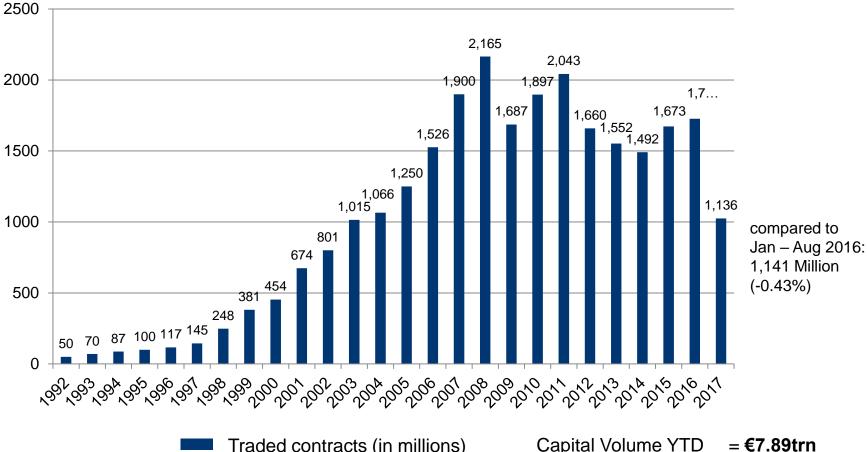


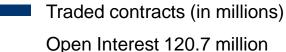
376 Eurex members in 33 countries 7.118 registered traders





Development of contract volume





Capital Volume YTD = €7.89trn
Open Interest = €2.93trn



Types of trading at Eurex Exchange

Order book – Trading and clearing

- Eurex Group offers trading and clearing services in a wide range of derivatives contracts.
- Orders are matched in public order books according to the following allocation schemes:
 - Time allocation:
 - Pro-rata allocation:
 - Time-pro-rata allocation:

Eurex Trade Entry Service - Pre-arranged trading and clearing

- Supplemental to the electronic markets, Eurex also provides trade entry and clearing services for bilaterally pre-arranged transactions in options and futures products listed at Eurex Exchange.
- For this purpose, members may use the Eurex Trade Entry Services to enter such trades for subsequent clearing through Eurex Clearing AG.



Eurex Clearing

Lower risk

- €6.7m contracts €414bn notional cleared every day
- 391 clearing licenses in 18 European countries
- 484 NCM's
- €2.9t Open Interest in ETD
- ~€1`000bn Outstanding in OTC IRS
- 143 Repo members
 €112.4bn daily term
 adjusted volume,
 €101.1bn Outstanding

Lower costs and capital



Greater efficiency

- X-product clearing under a single legal netting set lowers capital and lowers funding costs
- Integrated Derivatives and Securities Finance
- Large spectrum of eligible collateral and access to central-bank
- Over EUR 48.44 bn initial margin collateral under management
- DF EUR 3.27bn Lines of Defence EUR 12bn



Eurex Clearing's guiding principle in a default situation is to minimize the effect on the Lines of Defense and to stabilize the markets

Eurex Clearing Lines of Defense

- Eurex Clearing provides a multi-level security system
 - First the collateral and the Clearing Fund contribution of the member in default are utilized.
 - After the defaulter's contributions are exhausted, an assigned dedicated amount of Eurex Clearing is applied, before non-defaulting clearing members' Clearing Fund contributions, and remaining capital of Eurex Clearing are used.
- Each clearing member's contribution to the Clearing Fund is based on a minimum contribution and a dynamic component, accounting for the individual clearing member's risk situation.
- There is one segmented Clearing Fund for listed and OTC business.
- Following a realization of any Clearing Fund contributions of nondefaulted clearing members, such clearing members are asked to provide assessments to their contributions.
- Clearing members' total liability is limited as they have to provide a maximum of two assessments per capped period.

Eurex Clearing Lines of Defense

Position Netting

Collateral of Clearing Member in Default

Clearing Fund Contribution of Clearing Member in Default

Dedicated Amount of Eurex Clearing

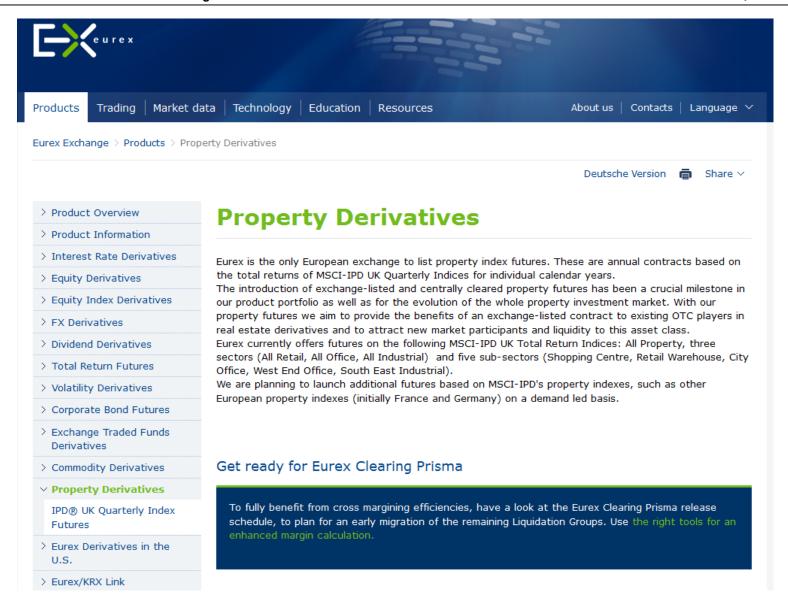
Clearing Fund Contribution of Other Clearing Members

Max 2 Assessments per Clearing Member

Parental Guarantee

Remaining Capital of Eurex Clearing







Appendix

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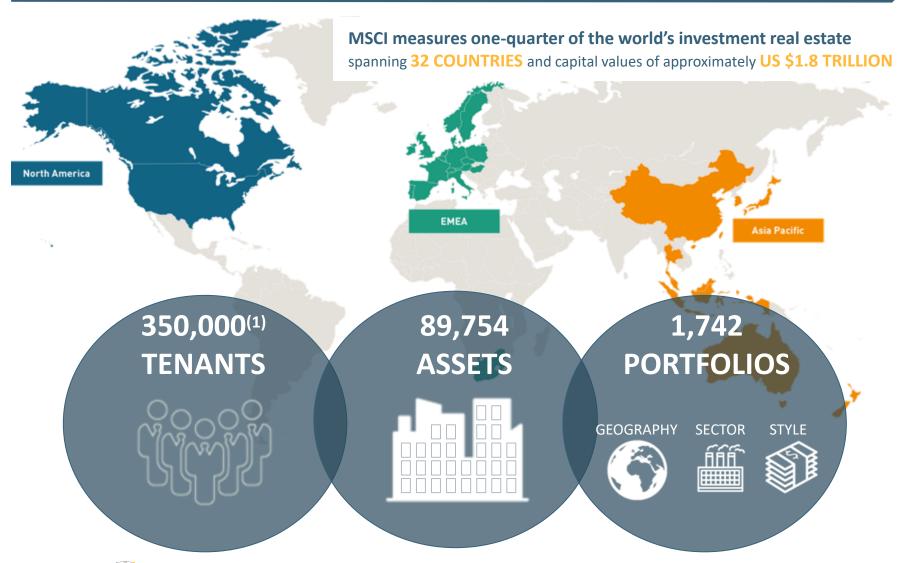
PROPERTY DERIVATIVES

MSCI – IPD INDEX PROVIDERS

WILL ROBSON OCTOBER 2017

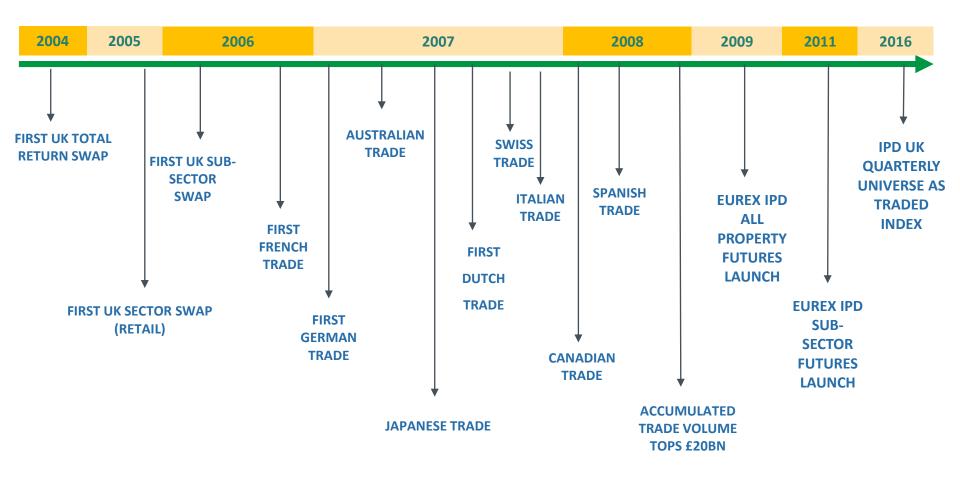


COMPREHENSIVE GLOBAL COVERAGE





TIMELINE OF DERIVATIVE TRADES ON MSCI-IPD INDICES





PROPERTY DERIVATIVES – UK TRADED INDEXES

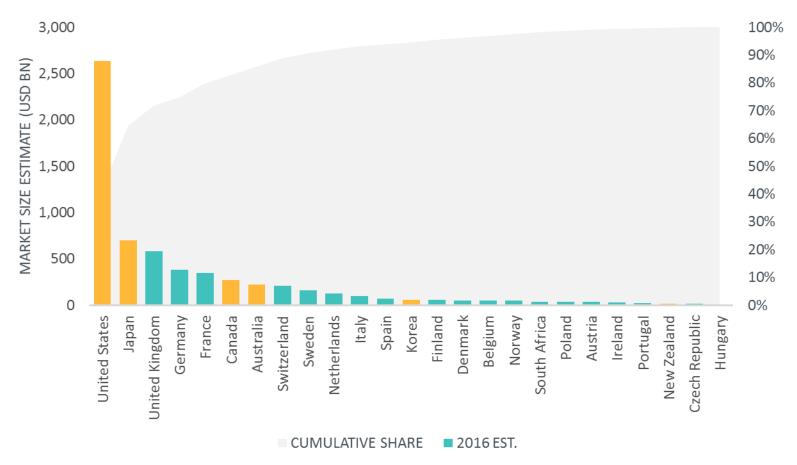




NATIONAL MARKET INDEXES

ESTIMATED MARKET SIZES ACROSS GLOBAL INDEX CONSTITUENTS

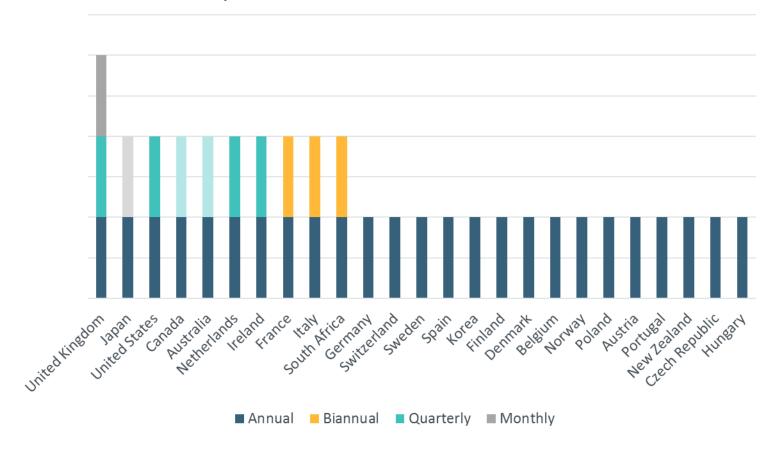
2015 ESTIMATES INFLATED BY 2016 CAPITAL VALUE GROWTH





NATIONAL MARKET INDEX FREQUENCY

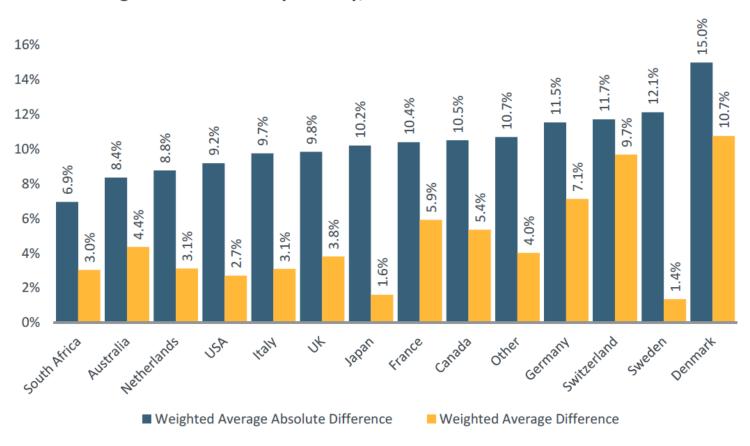
FREQUENCY AVAILABILITY BY NATIONAL MARKET





VALUATION VS. SALES PRICES

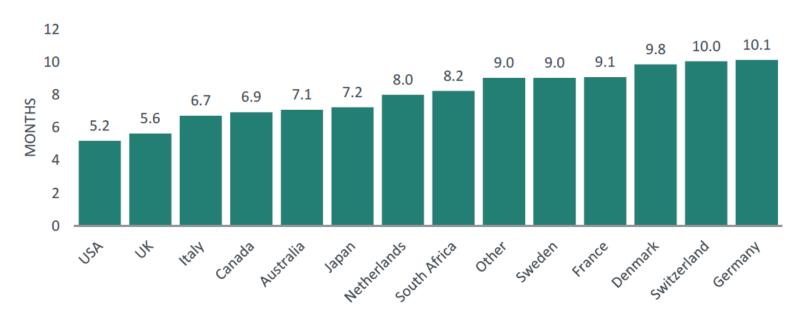
Weighted Differences by Country, 2007 to 2016





SALES DATES VS LAST VALUATION

Average Number of Months between Valuation and Sale, 2007 to 2016





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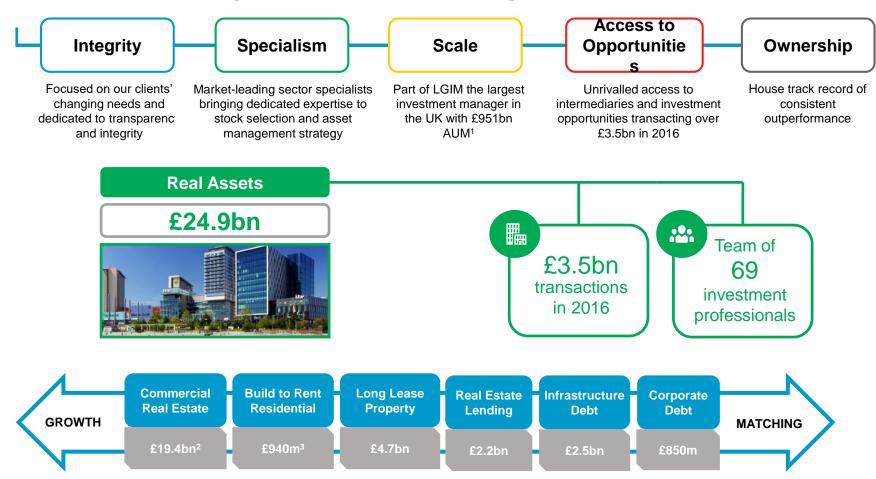
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LGIM Real Assets

Committed to delivering solutions to meet the long term needs of our clients



¹ LGIM internal data as at 30 June 2017. These figures include assets managed by LGIMA, an SEC Registered Investment Advisor. Data includes derivative positions. Asset class data is calculated by mandate type, excluding crossholdings in other funds.



² Including cross-holdings as at June 2017. This figure includes BTR and Long Lease Property

³ Reflects committed & actual capital

Where we have come from and where we need to go

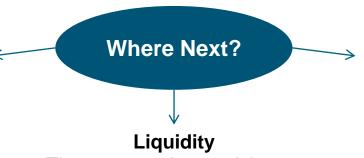


Important developments to date

- Moved away from OTC swaps to exchange traded products (Eurex)
- Futures available on MSCI / IPD sectors and sub-sectors
- New entrants and new strategies being employed resulting in greater liquidity
- Education across the industry

Continued Education

The usefulness of the product as a property / multi-asset portfolio management tool and getting set up to trade



The more market participants the greater the liquidity / ease of trading and the lower the transaction costs

Transparency

Transparency around the development of the market and the strategies being employed by market participants

How do we use property derivatives?



- Efficient Portfolio Management
 - Efficiently reducing cash drag at lower cost
- Risk Management
 - Adjusting sector or segment exposures synthetically
 - Hedging property exposure in property or multi asset portfolios
- MSCI / IPD futures are an additional tool when managing property or multi-asset portfolios:
 - Quick, low cost and dynamic implementation of real estate strategies
 - No tracking error relative to MSCI / IPD indices
- L&G have been active in the property derivatives market since 2009

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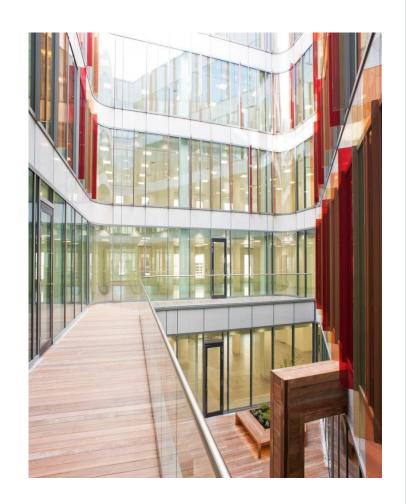
Key Considerations

Setting up and trading

- Education
- Internal trading systems and controls
- Custodian
- Clearing broker
- Execution broker

Fees

 The market standard for exchange, clearing and broker fees is less than 50 bps



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Case Study 1: Reducing cash drag All UK Property 2013

- Open ended property fund with Net Cash balance of c.£310m (20% NAV)
- Target Net Cash balance of c.10%
- Derivative would offer immediate exposure

.....

- MSCI-IPD Futures Price was 1.45%
- January 2013: L&G House View for 2013 was <u>5.1%</u>
- Trade £70m equals net cash flow of £2.6m to the Fund

.....

Outcome: All UK Property Total Return 2013 was 10.7%

Resulted in net cash flow of £6.4m or 43bps

Liquidity: Held to expiry (13 months)



Case Study 2: Hedging Portfolio Risk Sector Switch 2015

- Open ended property fund
- Relative performance target
- Seeking to reduce over and underweight positions efficiently
- Overlay Portfolio Rebalance by selling Shopping Centres & Buying All Industrial
- Spread between two legs of the trade was <u>6%</u>
- If Industrials outperforms Shopping Centres by more than 6% the fund would be in the money
- Outcome was 6.8% difference at settlement
- Risk adjusted return & direct portfolio unchanged



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Real Estate Derivatives Summit: Ongoing Initiatives

Q&A with Audience & Discussion

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