Are standard investment risk measures applicable to private real estate equity?
Agenda

- Identifying the causes of volatility in asset and portfolio returns
- Can these causes be measured and managed?
- How to measure illiquidity risk, what’s the price of illiquidity?
- How can the risks in different national markets be compared, including for emerging markets?
Solely focused on property across the globe

**Jones Lang LaSalle Inc.**  
(JLW founded 1783, merger with LaSalle 1999)

- $2.7 billion in revenue for 2007
- Over 170 markets in 60 countries spanning 5 continents
- 17,800 professional employees
- New York Stock Exchange listed company (ticker: JLL)

**LaSalle Investment Management**
- $50.4bn AUM
- 764 employees in 26 offices in 15 countries
- Direct private real estate
  - Separate accounts
  - Commingled funds
  - Multi-manager accounts

**LaSalle Investment Management Securities**
- Public equity division founded in 1985
- $9.4bn AUM

**Jones Lang LaSalle**
- Capital Markets
- Global Corporate Finance
- Tenant representation
- Land sales and acquisitions
- Valuation and appraisal
- Property management
- Agency leasing
- Facility services
- Retail services
- Project management

**Jones Lang LaSalle Hotels**
- A full service global hotel advisory company
LaSalle Investment Management – Global investments

Assets under management
Total: $50.4 billion

- UK private segregated accounts: $11.8bn
- UK private commingled funds: $3.7bn
- Continental Europe private segregated accounts: $0.6bn
- Continental Europe private commingled funds: $7.5bn
- North America private segregated accounts: $3.6bn
- North America private commingled funds: $2.0bn
- Asia Pacific private segregated accounts: $10.9bn
- Asia Pacific private commingled funds: $0.9bn
- Listed securities (regional mandates): $3.5bn
- Global securities: $5.9bn

Source: LaSalle Investment Management as at 31/12/07
Customised strategies for varied risk-return objectives

Current Offerings
Active Funds
Completed Funds

Riskless Rate
Return

Security of Income
Growth-Orientated
Opportunistic

Core

- North America Open-end Fund
- Asia Property Fund
- Encore +
- Core Separate Accounts
- CalEast Industrial Program
- Income Parking Fund

Value-Add

- LaSalle Mexico Fund
- LaSalle Strategic Capital Fund I
- LaSalle Global Property Securities Fund
- Value-Add Separate Accounts
- Securities – Global, U.S., Europe, Specialised
- LaSalle Income & Growth Fund V
- Japan Logistics Fund II
- LaSalle German Income & Growth
- LaSalle Medical Office Fund II
- LaSalle Canadian Income & Growth Fund II
- LaSalle Income & Growth Fund IV
- LaSalle German Retail Venture
- LaSalle London Office Fund
- Canadian Income & Growth Fund
- LaSalle Income & Growth Fund III
- Florida Office Property Company
- Euro 5 Fund
- LaSalle Euro Growth II Fund
- LaSalle Income & Growth Fund II
- LaSalle Income & Growth Fund I
- LaSalle Medical Office Fund

Opportunistic

- LaSalle European Ventures Fund III
- Opportunistic Separate Accounts
- Japan Logistics Fund II
- LaSalle Asia Opportunity Fund III
- LaSalle UK Ventures Fund
- LaSalle French Fund II
- LaSalle Asia Opportunity Fund II
- Japan Logistics Fund
- LaSalle Asia Recovery Fund
- Francilienne
Identifying the causes of volatility in asset and portfolio returns
Problems with risk as volatility

- No distinction between upside and downside
- Past volatilities and correlations are not stable
- IPD data exhibits considerable serial correlation - appraisal smoothing
- Returns exhibit non-normal dispersion "fat tails"
- Backward looking: rely on past valuation data
- Has no inherent diagnostic information: single figure result
- Emphasise relative volatility (tracking error), not absolute
- Cannot provide a basis for monitoring action
- Equates volatility with risk: what about uncertainty?

"CAPM based risk management probably mis/under estimates property risk and has little diagnostic content"
The LaSalle approach

- Replace volatility/standard deviation with some real estate relevant measures

- Build a range of measures rather than over reliance on just one figure

- Decompose risk into its fundamental sources
Decomposing volatility

Volatility

- Income Fluctuation
- Capital Value Change
- Currency
- Leverage

ERV Change
- Re-leasing
- Rent Review
- Default

Yield Shift

Depreciation

Economy

Local Supply

Capital Markets
Analyzing the causes of risk

The Fundamentals

- Yields Rise above expectations
- Rents grow below expectation
- Income Defaults
- Lease up longer than expected

A Portfolio

- Growth: 47%
- Leasing 08/09: 13%
- Yield: 17%
- Default: 14%
- Stabilised: 9%

Source: LaSalle Investment Management
Analysing the causes of risk II: the modulators

Source: LaSalle Investment Management
Development: a combination of different risks or a separate factor?

Components of development risk:
- Securing zoning/planning permission
- Assembling the site/land ownership rights
- Defining the density of development
- Construction: price and time over-run, defect liability
- Partner issues
- Financing
- Leasing

Most investors do not get involved in development projects until stage 4
Can these causes be measured and managed?
Manageable measures

Volatility

- Income Fluctuation
- Capital Value Change
- Currency
- Leverage

Risk Metric
- concentration by year
- tenant concentration default probability
- economic sensitivity
- sector weighting
- locational exposure forecasting error
- duration risk premia
- increased VaR

- Re-leasing
- Rent Review
- Default
- ERV Change
- Yield Shift
- Depreciation
- Economy
- Local Supply
- Capital Markets
Measuring risk factors: absolute basis

<table>
<thead>
<tr>
<th>Sector</th>
<th>Country</th>
<th>LTV</th>
<th>Foreign Exchange</th>
<th>Lot Size</th>
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<td></td>
<td>100</td>
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</tbody>
</table>

Source: LaSalle Investment Management
Measuring risk in a fund: absolutely

**Risk Profile:**
- **Net Operating Income (NOI) Factors:**
  - Rental rate shifts: 30%
  - Leasing risk: 20%
  - Short term income rollover risk (within 1 year): 10%
  - Yield shifts: 20%
  - None of the above (i.e. core): 0%
  - Development (see details below)*: 20%

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rental rate shifts</td>
<td>30%</td>
</tr>
<tr>
<td>Leasing risk</td>
<td>20%</td>
</tr>
<tr>
<td>Short term income rollover risk</td>
<td>10%</td>
</tr>
<tr>
<td>Yield shifts</td>
<td>20%</td>
</tr>
<tr>
<td>None of the above (i.e. core)</td>
<td>0%</td>
</tr>
<tr>
<td>Development (see details below)*</td>
<td>20%</td>
</tr>
</tbody>
</table>

| Total (should = 100%)                  | 100%       |

* Development:
- Planning/zoning risk: 0%
- Building permit risk: 0%
- Liability for cost over run: 0%
- Liability for time over run: 5%
- Defect liability: 0%
- Leasing risks: 15%

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Planning/zoning risk</td>
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<tr>
<td>Building permit risk</td>
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<tr>
<td>Liability for cost over run</td>
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<tr>
<td>Liability for time over run</td>
<td>5%</td>
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<tr>
<td>Defect liability</td>
<td>0%</td>
</tr>
<tr>
<td>Leasing risks</td>
<td>15%</td>
</tr>
</tbody>
</table>

| Total (should tie to % noted above)| 20%        |
Measuring risk in a fund: relatively

The Blundell Risk Web

- Asset Concentration
- Location Concentration
- Tenant Concentration
- Tenant Covenant Quality
- Lease Length
- Vacancy Rate
- Income Return
- Sector Balance
- Exposure to (volatile) Central London
- Developments

IPD universe median score
Typical Blundell profile by type of institutional fund

- Asset Concentration
- Location Concentration
- Tenant Concentration
- Sector Balance
- TICCS
- Lease Length
- Weighted Betas
- Vacancy Rate
- Developments
- Income Return

Large Life (£1bn) | Small Pension (£150m) | IPD Universe median score
Which risk factors matter most?

Predicting tracking error 2001 - 03

Adjusted $R^2 = 0.45$ and Standard Error = 98 bps

Correlation Coefficients

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Correlation</th>
<th>T-statistic</th>
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</thead>
<tbody>
<tr>
<td>Weighted Beta 2001</td>
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<tr>
<td>Structure Balance 2001</td>
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<td>Income 2001</td>
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<td>Developments 2001</td>
<td>0.52</td>
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<tr>
<td>Asset concentration 2001</td>
<td>0.22</td>
<td></td>
</tr>
</tbody>
</table>

(90% Confidence)

"Weighted Beta" was factored by % exposure to London

Source: Blundell et al. (2005)
How to measure illiquidity risk, what’s the price of illiquidity?
Measuring illiquidity

Transaction speed
- Volume of deals
- Efficiency of sale process
  - Legal and market

Price certainty
- Market transparency

In practice, most investors seek 2 – 3% over bonds for real estate and illiquidity is key component requiring extra return
How can the risks in different national markets be compared, including for emerging markets?
Methodology

The survey includes 33 questions designed to measure real estate transparency as objectively as possible. The Real Estate Transparency Index 2008 covers 82 markets, which were rated against 5 transparency tiers.

The questions address five categories of transparency:

1) Investment Performance Indices (7)
2) Availability of Market Fundamentals Data (5)
3) Listed Vehicles Financials (3)
4) Regulatory and Legal Factors (11)
5) Professional Standards and Transaction Process (7)
Key findings of 2008 study

Compared to 2006:
- 27 out of 56 countries improved their transparency scores
- 8 countries moved up a full tier, none moved back
- 26 new markets were added to the Index
- New questions added to address occupier perspective

- Dubai saw the largest transparency improvement globally
- Venezuela is the only country whose transparency level declined
- 28 countries saw little to no movement in transparency scores compared to 2006.
- Of the 5 sub-indices, the availability of market fundamentals and listed vehicles are the two least transparent sub-indices
## The ten most transparent countries, 2008

<table>
<thead>
<tr>
<th>2008 Composite Rank</th>
<th>Country</th>
<th>2008 Composite Score</th>
<th>2008 Composite Tier</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Canada</td>
<td>1.17</td>
<td>1</td>
</tr>
<tr>
<td>2=</td>
<td>Australia</td>
<td>1.20</td>
<td>1</td>
</tr>
<tr>
<td>2=</td>
<td>United States</td>
<td>1.20</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>New Zealand</td>
<td>1.21</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>United Kingdom</td>
<td>1.31</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Netherlands</td>
<td>1.33</td>
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<tr>
<td>7</td>
<td>France</td>
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<td>Sweden</td>
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<td>9</td>
<td>Belgium</td>
<td>1.48</td>
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<tr>
<td>10</td>
<td>Ireland</td>
<td>1.52</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: Jones Lang LaSalle, LaSalle Investment Management
Risk ranking national markets: characteristics

Developed
- Sovereign bond
- Liquidity
- Typical lease length
- Stability/volatility of income stream

Emerging
- Sovereign bond
- Real estate transparency
- Political stability
- Expected GDP growth

*Focus on income producing assets*  
*Focus on development*
Conclusions

- Causes of volatility in asset and portfolio returns can be identified - fundamentals and modulators
- And measured (both absolutely and relatively) so they can be managed
- Measuring illiquidity risk is complex but the number is more important:
  - Risks in different national markets be compared through analysing a variety of factors, particularly market transparency

But standard finance risk measures aren’t much use for private real estate
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References:

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IPE Real Estate Jan-Feb pp 34-35
Investment Property Forum, London

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