Fifty Years of the Homer Hoyt Institute

1895 Born in St. Joseph, MO

1914 MA and BA University of Kansas

1923 JD University of Chicago

1925-34 Real Estate Broker and Speculator
   Urban Growth: Sector Theory

1933 PhD University of Chicago
   100 Years of Land Values

1934 – 1940 Federal Housing Administration

1941 – 1947 MIT and Columbia

1948 Shopping Center Studies
   Economic Base Theory

1951 Founded Homer Hoyt Associates

1967 Founded the Homer Hoyt Institute for Real
   Estate Research and Education
Tony Downs  
RERC Founder  
Library Cast-offs
Real Estate: Anglo Saxon Model

Neither we nor our officials will seize any land or rent in payment of a debt, so long as the debtor has movable goods sufficient to discharge the debt.

Landlords grow rich in their sleep without working, risking or economising

Land monopoly is not only monopoly, but it is by far the greatest of monopolies; it is a perpetual monopoly, and it is the mother of all other forms of monopoly

King John 1215
Magna Carta

John Stuart Mill
On Liberty 1859

Winston Churchill
Real Estate: US Frontier Thesis (Fredrick Jackson Turner 1893)

Buy land, they’re not making it anymore

Mark Twain

The major fortunes in America have been made in land

John D. Rockefeller

It’s tangible, it’s solid, it’s beautiful. It’s artistic, from my standpoint, and I just love real estate

Donald Trump
Real Estate: Social Upheaval or Stability

The rentier state is a state of parasitic, decaying capitalism.

Vladimir Lenin 1916 “Treatise on Imperialism”

Real Estate cannot be lost or stolen, nor can it be carried away. Purchased with common sense, paid for in full, and managed with reasonable care, it is about the safest investment in the world.

Franklin D. Roosevelt
Civil Code Tradition Covers Most of the World’s Population
Latin and Roman Law dominates South American, Southern Europe and parts of Africa and East Asia

Section III. 676  The proprietor of a wall which is not joining immediately the estate of another, may form in such wall lights or windows of wire-lattice, and fan-lights. These windows must be furnished with a lattice work of iron, the meshes of which shall extend to an opening of one decimeter, (about three inches) and with a dormant window. These windows or lights must not be less than twenty-six decimeters (eight feet) above the floor or base of the chamber which is desired to be lighted, if it be the ground-floor, and nineteen decimeters (six feet) above the floor for the upper stories.

Without an integrated formal property system, a modern market economy is inconceivable.

Hernando de Soto Polar
The Mystery of Capital
Cross Border Real Estate: Rationale, Challenges, & Strategy
Rationale for Investing Across Borders

- Larger Investment Universe
- Greater Variety of Potential Risk-Return Strategies
- Diversification (lower risk for similar return)
- Availability of Tax-Efficient Structures*
- Limited Domestic Opportunities*
- Access to Emerging Market Growth
- Access to Developed Market Stability

* In some, but not all cases.
## Cross-Border Investing Challenges

<table>
<thead>
<tr>
<th>Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finding Reliable Local Partners</td>
</tr>
<tr>
<td>Low Market Transparency in Many Emerging Markets</td>
</tr>
<tr>
<td>Limited Regional and Cross-Border Benchmarks</td>
</tr>
<tr>
<td>Currency and Political Risk</td>
</tr>
<tr>
<td>Tax Drag and Capital Controls in Some Markets</td>
</tr>
<tr>
<td>Global integration Erodes Diversification Benefits</td>
</tr>
<tr>
<td>More Complex Strategy Integration &amp; Decision Making</td>
</tr>
</tbody>
</table>
Direct Commercial Real Estate Investment

Top 20 Cities, Q1 2017

- London
- Tokyo
- New York
- Los Angeles
- Washington DC
- Boston
- Hong Kong
- San Francisco
- Vancouver
- Seoul
- Shanghai
- Silicon Valley
- Singapore
- Chicago
- Charlotte
- Mecca
- Dallas
- Houston
- Madrid
- Osaka

Source: JLL, April 2017
Total Real Estate: Past, Present, and Forecast
Regional Share of the Universe Over Time

Sources used in LaSalle analysis: Oxford Economics, Citigroup, Bloomberg, NCREIF, MSCI, Investment Property Forum (UK), Sumitomo Mitsui Trust Research Institute, National Bureau of Statistics of China, Hong Kong Rating and Valuation Department, Singapore Urban Redevelopment Authority, US Bureau of Economic Analysis, US Federal Reserve, Self-Storage Association (UK), Company financial statements

Analysis as of Q3 2015
Potential for Professional Management of Real Estate

REITs own 40% of all institutionally held real estate and 7% of all commercial real estate globally.

Public Real Estate
US$ 3.6 trillion

Institutional Public & Private
US$ 9.0 trillion

All Commercial Real Estate
US$ 49.2 trillion

Sources: Oxford Economics, Citigroup, Bloomberg, NCREIF, MSCI, Investment Property Forum (U.K.), Sumitomo Mitsui Trust Research Institute, National Bureau of Statistics of China, Hong Kong Rating and Valuation Department, Singapore Urban Redevelopment Authority, U.S. Bureau of Economic Analysis, U.S. Federal Reserve, Self-Storage Association (U.K.), and company financial statements (3Q 2015)
Global Real Estate Securities (GRES) as an Alternative
Relatively Efficient Way to Access International, as Well as Niche Property Types

FTSE EPRA/NAREIT Developed Index

Property Type Comparison

Source: FTSE EPRA/NAREIT Developed Index. IPD Global Fund Index. Weights may not add up to 100% due to rounding.
Private Equity: Cross-border Real Estate Spectrum

Is Cross-Border Worth it?

- Larger investment universe
- Greater diversification
- Limited domestic opportunity
- Potential for lower risk
- Potential for higher returns

Core international relatively less attractive

Core international relatively more attractive

Core

Relative Return Strategies

- Larger investment universe
- Greater diversification
- Limited domestic opportunity
- Potential for lower risk
- Potential for higher returns

Small and less transparent domestic market

Higher Return

Absolute Return Strategies

Larger investment universe
Potential for higher returns

Specialized versus Global
Rationale for Cross Border: Correlations show some diversification benefits

### Private Indices Correlations to US

<table>
<thead>
<tr>
<th>Local Currency Return Correlations</th>
<th>5 Year</th>
<th>10 Year</th>
<th>15 Year</th>
<th>20 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>0.19</td>
<td>0.88</td>
<td>0.87</td>
<td>0.85</td>
</tr>
<tr>
<td>Japan</td>
<td>0.23</td>
<td>0.81</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>France*</td>
<td>0.64</td>
<td>0.74</td>
<td>0.75</td>
<td>N/A</td>
</tr>
<tr>
<td>Germany*</td>
<td>0.08</td>
<td>0.49</td>
<td>0.15</td>
<td>N/A</td>
</tr>
<tr>
<td>Netherlands**</td>
<td>-0.28</td>
<td>0.51</td>
<td>0.48</td>
<td>N/A</td>
</tr>
<tr>
<td>UK</td>
<td>0.56</td>
<td>0.52</td>
<td>0.57</td>
<td>0.58</td>
</tr>
<tr>
<td>Canada</td>
<td>0.02</td>
<td>0.66</td>
<td>0.64</td>
<td>0.63</td>
</tr>
</tbody>
</table>

### Public Indices Correlations To US

<table>
<thead>
<tr>
<th>Local Currency Returns</th>
<th>5 Year</th>
<th>10 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>0.31</td>
<td>N/A</td>
</tr>
<tr>
<td>Japan</td>
<td>0.18</td>
<td>0.47</td>
</tr>
<tr>
<td>France</td>
<td>0.45</td>
<td>0.75</td>
</tr>
<tr>
<td>Germany</td>
<td>0.66</td>
<td>0.70</td>
</tr>
<tr>
<td>Netherlands</td>
<td>0.49</td>
<td>0.70</td>
</tr>
<tr>
<td>UK</td>
<td>0.28</td>
<td>0.83</td>
</tr>
<tr>
<td>Canada</td>
<td>0.55</td>
<td>0.86</td>
</tr>
</tbody>
</table>

Comparing correlations between real estate returns across markets highlights the diversification benefits of an international portfolio. However, many of these correlations are also quite high over 10-20 year periods. This is driven largely by the GFC, when markets were highly correlated.

One shortcoming of the private index correlations is that they are a product of their market’s appraisal methodologies. German appraisal methodology, for example, is slow to recognize capital value shifts, and this is the main reason that correlations with German appear consistently low.

---

*Netherlands, France, and Germany data is annual to 2015, and compares to US MSCI Index. **5 Year correlation for Netherlands is quarterly, annual for other periods. Annual data is used only where quarterly data is not available. In cases where annual data is used, the correlations are based on annual to annual correlations.

Source: MSCI / IPD, NCREIF, EPRA/NAREIT, LaSalle. Japan data to Q3 2016; IPD Netherlands, Germany, and France data to Q4 2015; All others Q4 2016. REIT data to Q4 2016. Longer time periods are not shown for public indices due to limited data availability.
Global Real Estate – Final Returns in for UK, Canada, Australia

Australia Leads Global Returns, UK Lags

<table>
<thead>
<tr>
<th>Average Annual Total Return</th>
<th>To 31 December 2016 (Actual)</th>
<th>To October 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Stocks¹</td>
<td>Global RE Securities²</td>
<td>Global Corporate Bonds³</td>
</tr>
<tr>
<td>1 Year</td>
<td>9.6%</td>
<td>5.0%</td>
</tr>
<tr>
<td>3 Years</td>
<td>7.5%</td>
<td>6.8%</td>
</tr>
<tr>
<td>5 Years</td>
<td>13.4%</td>
<td>10.3%</td>
</tr>
<tr>
<td>10 Years</td>
<td>4.9%</td>
<td>2.2%</td>
</tr>
<tr>
<td>20 Years</td>
<td>6.4%</td>
<td>7.4%</td>
</tr>
</tbody>
</table>

Outperformance versus: Stocks and Bonds

Bonds

Notes on Sources
1. MSCI All Country Gross World Total Return Index in Local Currency
2. EPRA/NAREIT Global (Developed) Index Total Return in US Dollars
3. Citigroup World Corporate Bond Index Total Return in US Dollars (Local Currency History Not Available Prior to 1999)
4. Citigroup World Government Bond Index All Maturities Total Returns in Local Currency
5. US NCREIF Property Index Total Returns in US Dollars
6. UK Investment Property Databank (IPD) Quarterly Standing Property Total Returns in British Pounds, data prior to Dec 2001 is IPD Annual
7. Canada Investment Property Databank (IPD) Quarterly Standing Property Total Returns in Canadian Dollars
8. Australia Investment Property Databank (IPD) Quarterly Standing Property Total Returns in Australian Dollars

Updated 27 February 2017
Cross Border Challenge: Direct index tracking error vs. NPI in USD terms
NCREIF Property Index vs. IPD Indices in UK, Japan, & Australia

Trailing Year Direct Index Total Returns in USD

Source: NCREIF, IPD, LaSalle. Data to Q4 2016 wherever available.
LaSalle’s Lessons Learned

1. Need to have clear explicit understanding and agreement of investment objectives and risk parameters

2. Don’t take risks in other countries that you would never take in your home country

3. Need to have strong local market implementation capabilities

4. Tax and currency considerations are very real

5. It is usually more expensive to invest outside your home country

6. Real Estate supply/demand fundamentals tend to be very local. Capital market fundamentals tend to be more globally driven and correlated
International Real Estate: Course Outline

First Principles
- Rationale
- Challenges
- Transparency

Macro and Micro Analysis
- An Investment Thesis

Investment Formats and Structures

Financial Analysis
- Currency, Tax

Portfolio Construction
<table>
<thead>
<tr>
<th>International Real Estate Curricula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rising Demand by Students (domestic and Intl)</td>
</tr>
<tr>
<td>Business-Schools Push to “offer more global”</td>
</tr>
<tr>
<td>Textbooks are US-Centric</td>
</tr>
<tr>
<td>International RE Cases are pre-GFC</td>
</tr>
<tr>
<td>Research and Literature Now More Multi-national</td>
</tr>
<tr>
<td>BoK* for Cross-Border Theory and Practice is Growing</td>
</tr>
<tr>
<td>Cross-Border Skills are in High Demand by Employers</td>
</tr>
</tbody>
</table>

* Body of Knowledge
Capital Markets: debt & equity
Interest Rates and Real Estate debt costs
Currency Markets
Commodity Prices
Investment Vehicles
Many Tenants
Owners and Operators
Engineering and Architecture Firms
Service Providers
  - Leasing, Sales, Legal, Technology
  - Investment managers
  - Investment bankers

• Assets and Surroundings
• Is Supply 100% Local?
• Demand not 100% Local
• Land Use Regs
• Property Taxes
• Transportation Networks
• Local Developers/owners
• Property Management
• Construction (local + Intl)
• Maintenance, Security

A Terrific Classroom Exercise
Taking **Real Estate Transparency** to the Next Level

Global Real Estate Transparency Index  2016
Global Real Estate Transparency Index: www.jll/greti.com

Tracking the evolution of real estate transparency

First published in 1999

A unique Index of real estate transparency

Updated every two years

Comprehensive comparisons of 109 markets world-wide
The World of Real Estate Transparency

**Stakeholders**
- Investors
- Corporates
- Governments
- Citizens / Communities

**Influencers**
- International Organisations
- Industry Bodies
- Real Estate Advisors

**Ingredients**
- Performance Measurement
- Market Fundamentals
- Corporate Governance
- Regulatory & Legal Framework
- Transaction Processes
- Green Building Regulations

**Drivers**
- Rising Expectations
- Increasing Capital Allocations
- Technological Advancement
- Demand for Sustainable Buildings
Real Estate Transparency Index and Investment Volumes

Transparency rises with investment activity

Highly liquid and transparent markets

Based on direct commercial real estate volumes, 2011-2015
Sources: JLL, LaSalle Investment Management, Oxford Economics

R² = 0.5229
Global Real Estate Transparency Index, 2016

The Model incorporates 139 different elements, a 21% increase since 2014

Source: JLL, LaSalle Investment Management
Global Real Estate Transparency Index, 2016
Covers 109 markets worldwide ... 9 additional markets in 2016

Source: JLL, LaSalle Investment Management
New technologies taking real estate information online

Access and availability of information improving thanks to online platforms

Flexible Booking Platforms

Online Databases & Marketplaces

Portfolio Management

Technology

Smoother Transactions
Finding real estate using Google Earth
What is Driving Greater Real Estate Transparency?

### Drivers

<table>
<thead>
<tr>
<th>Increasing Capital Allocations</th>
<th>Rising Expectations</th>
<th>Technology</th>
<th>Sustainable Buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Real estate competing with other asset classes</td>
<td>• Citizens demand greater accountability</td>
<td>• A driver and an enabler</td>
<td>• Demand for tools to monitor green buildings</td>
</tr>
<tr>
<td>• $1 trillion targeting real estate by 2020s</td>
<td>• Panama Papers put transparency in spotlight</td>
<td>• More accurate, granular and timely data</td>
<td></td>
</tr>
</tbody>
</table>

![Real Estate TRANSPARENCY](image-url)
Global Office Property Clock Q1 2017

Based on rents for Grade A space in CBD or equivalent.
This data is based on material/sources that we believe to be reliable. While every effort has been made to ensure its accuracy, we cannot offer any warranty that it contains no factual errors. Neither Jones Lang LaSalle nor any of its affiliates accept any liability or responsibility for the accuracy or completeness of the information contained herein.
Office Supply Pipeline - Major Markets

2017 - 2018

Source: JLL, April 2017. Covers all office sub-markets in each city. Tokyo – CBD - 5 kus
Shanghai 1900
Pudong, Shanghai  1990
Pudong 2005
Pudong-Puxi 2011
China’s 12th Five-Year Plan: One Belt, One Road Infrastructure Spending Continues to Head West

**Infrastructure Development Plan in China**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Railway</td>
<td>Km</td>
<td>75,438</td>
<td>91,000</td>
<td>+21%</td>
<td>120,000</td>
<td>+32%</td>
</tr>
<tr>
<td>High-speed rail*</td>
<td>Km</td>
<td>405</td>
<td>8,358</td>
<td>+1964%</td>
<td>45,000</td>
<td>+438%</td>
</tr>
<tr>
<td>Highway</td>
<td>km</td>
<td>41,005</td>
<td>74,100</td>
<td>+81%</td>
<td>105,000</td>
<td>+42%</td>
</tr>
<tr>
<td>Airports</td>
<td>#</td>
<td>142</td>
<td>175</td>
<td>+23%</td>
<td>220</td>
<td>+26%</td>
</tr>
<tr>
<td>Coastal port throughput</td>
<td>bn ton</td>
<td>3</td>
<td>6</td>
<td>+93%</td>
<td>8</td>
<td>+39%</td>
</tr>
<tr>
<td>Coastal port docks</td>
<td>#</td>
<td>1,113</td>
<td>1,774</td>
<td>+59%</td>
<td>2,214</td>
<td>+25%</td>
</tr>
<tr>
<td>Intra-city rail (subway)</td>
<td>km</td>
<td>486</td>
<td>1,400</td>
<td>+188%</td>
<td>3,000</td>
<td>+114%</td>
</tr>
</tbody>
</table>

* Estimated high-speed rail in operation

Source: CICC
Big Data: Homer Hoyt tracked miles of pavement!
Also tracked volatility of net cash flows over 30 years through the depression.
One Hundred Years of Land Values
Asset Price Cycles from Chicago to China:
The Log scale for 1900-1920 Chicago also works for China 1990-2010
<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Amsterdam</td>
<td>Luxembourg</td>
<td>Paris</td>
<td>Singapore</td>
</tr>
<tr>
<td>Atlanta</td>
<td>Madrid</td>
<td>Prague</td>
<td>Sydney</td>
</tr>
<tr>
<td>Baltimore</td>
<td>Munich</td>
<td>San Diego</td>
<td>Tokyo</td>
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<td>Chicago</td>
<td>Mexico City</td>
<td>San Francisco</td>
<td>Toronto</td>
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<tr>
<td>Hong Kong</td>
<td>Milan</td>
<td>Seoul</td>
<td>Vancouver</td>
</tr>
<tr>
<td>London</td>
<td>New York</td>
<td>Shanghai</td>
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