

# ASSESSING THE LINKAGES BETWEEN ECONOMIC COMPETITIVENESS AND PROPERTY MARKET TRANSPARENCY

GRAEME NEWELL  
University of Western Sydney

## ABSTRACT

*The effective functioning of commercial property markets is influenced by a wide range of local and global factors. To explore these inter-relationships and linkages, 54 countries are assessed in terms of their property market transparency and their global competitiveness across a wide range of parameters, including economic, institutional, infrastructure, environmental and technology factors. This analysis is at a regional property market level and property market maturity level. Quantitative measures of these inter-relationships are assessed to provide insights regarding these linkages with the transparency of these global commercial property markets.*

**Keywords:** Property market transparency, global competitiveness, economic competitiveness, World Economic Forum, linkages, correlation

## INTRODUCTION

There has been increased emphasis on international property investment, with global investible property now estimated to be over US\$17.2 trillion (EPRA, 2008). Table 1 presents the global commercial property transaction capital flows in 2006. Of the US\$682 billion in global commercial property transactions in 2006, US\$288 billion (42%) were cross-border transactions, with this ranging from 23%-61% across the major regions (JLL, 2007). This reflects the recent emphasis on international property investment, with an increased investor appetite for international property across both the developed and emerging property markets.

This focus on international property investment has been further facilitated by the recent development of the global REIT markets. These global REIT markets comprised \$800 billion in market capitalisation at December 2007, across the major REIT markets of the US (49.3%), Europe (19.9%), Australia (15.9%) and Asia (10.6%) (AME Capital, 2008). The growth in REITs has seen the emergence of global property securities funds amongst the major institutional investors (eg: Fidelity, ING Clarion, Nomura, AMP, Morgan Stanley, UBS, Cohen & Steers), with 250 global property securities funds accounting for US\$81 billion in funds under management at September 2007 (Moss and Hughes, 2007).

**Table 1: Global commercial property transaction capital flows: 2006**

<b>Region</b>	<b>Domestic</b>	<b>Cross-border</b>	<b>Total</b>	<b>Percentage of total global transactions</b>
Asia	\$54B (67%)	\$27B (33%)	\$81B	12%
Europe	\$118B (39%)	\$187B (61%)	\$305B	45%
US	\$206B (76%)	\$65B (24%)	\$271B	40%
Australia/NZ	\$10B (77%)	\$3B (23%)	\$13B	2%
Other	\$6B (50%)	\$6B (50%)	\$12B	1%
<b>Total</b>	<b>\$394B (58%)</b>	<b>\$288B (42%)</b>	<b>\$682B</b>	<b>100%</b>

Source: JLL (2007)

In accessing these international property markets, key requirements for international property investors include:

- accurate market and financial information
- reliable performance benchmarks
- enforceable contracts and property rights
- clarity regarding the taxation and regulation of property
- fair treatment in the transaction process
- ethical standards among professionals hired to transact business (JLL, 2006),

These six key requirements are particularly important for property investment decision-making in the emerging property markets. A key underlying issue in all of the above international property investor requirements is the issue of property market maturity and transparency. For example, this has been particularly evident in the equities markets, where emerging market equity funds hold fewer assets in less transparent countries and withdrew more strongly from less transparent countries during various financial crises (eg: Asian, Russian crises) (Gelos and Wei, 2002). This will become increasingly important; particularly in the context of the global credit crisis which has impacted on most property markets.

Importantly, the portfolio diversification benefits of international property have been demonstrated (Bond et al, 2003; Hoesli et al, 2004; Ling and Naranjo, 2002), as well as regional diversification benefits (eg: Asia) having been shown (Bond et al, 2003; Eichholtz et al, 1998). Other research aspects concerning international property investment have included property market convergence and integration (eg: Europe) (Lizieri et al, 2003; McAllister and Lizieri, 2006), property market maturity and transparency in Asia (Chin et al, 2006; Newell et al, 2005) and Europe (Brounen et al, 2001, 2007), and the investment opportunities in the emerging property markets in Eastern

Europe (Adair et al, 2006), Africa and South America (Lim et al, 2006), Asia (Jin et al, 2007), India (Newell and Kamineni, 2007) and China (Newell et al, 2005).

While the determinants of international property performance have been assessed for property returns and rents (eg: De Wit and Van Dijk, 2003; Hamelink and Hoesli, 2004; Matysiak and Tsolacos, 2003; Newell and Higgins, 1996; Ng and Higgins, 2007), the increased international property investor focus on property market maturity and transparency sees more research required in examining the factors influencing property market maturity and transparency; particularly in the emerging markets. As such, the purpose of this paper is to assess the linkages between property market maturity/transparency and various economic, social, institutional and technology competitiveness indicators in international property markets. These linkages will be assessed for 54 countries, as well as these linkages being assessed across various regions and for mature property markets versus emerging property markets.

## **METHODOLOGY**

### **Property market transparency**

To assess property market transparency, the Jones Lang LaSalle Real Estate Transparency Index was used (JLL, 2006), with this transparency index having been evaluated in 1999, 2001, 2004 and 2006. This JLL property market transparency index for 2006 assessed five criteria comprising 15 sub-categories concerning:

- availability of investment performance indices
- availability of market fundamentals data
- listed vehicle financial disclosure and governance
- regulatory and legal factors
- professional and ethical standards,

with the resulting property market transparency index (scored 1 to 5) comprising the five categories of:

- highly transparent: 1.00 to 1.49 (10 countries)
- transparent: 1.50 to 2.49 (14 countries)
- semi-transparent: 2.50 to 3.49 (17 countries)
- low transparency: 3.50 to 4.24 (10 countries)
- opaque: 4.25 to 5.00 (3 countries).

This JLL property market transparency index is opinion-based, based on the experience and perceptions of senior JLL staff working in each of these countries. Final rankings for these various countries are obtained by business leaders and JLL research staff. The naming of these five transparency categories and the cut-off points between the

transparency categories are subjective and derived by JLL to reflect the diversity of the transparency structures across the various global property markets. Table 2 presents the property market transparency index for the 56 countries assessed. Australia is the world's most transparent property market, with significant improvements in transparency evident for many countries in Asia. In particular, Hong Kong (#6) and Singapore (#10) are now classified as highly transparent property markets, partly reflecting the recent introduction of REIT markets in Hong Kong and Singapore. Many of the emerging property markets in Asia still have low levels of property market transparency, including China and Indonesia (low transparency) and Vietnam (opaque).

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**Table 2: JLL global real estate transparency index: 2006**

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**Highly transparent:**

Australia, US, New Zealand, Canada, UK, Hong Kong, Netherlands, Sweden, France, Singapore

**Transparent:**

Finland, Germany, South Africa, Denmark, Austria, Ireland, Belgium, Spain, Switzerland, Norway, Italy, Malaysia, Japan, Portugal

**Semi-transparent:**

Mexico, Czech Republic, Hungary, Poland, Israel, Taiwan, South Korea, Slovakia, Chile, Greece, Russia, Philippines, Brazil, Slovenia, Thailand, Argentina, India

**Low transparency:**

China, Macau, UAE, Costa Rica, Indonesia, Turkey, Peru, Romania, Colombia, Uruguay, Saudi Arabia, Panama

**Opaque:**

Egypt, Venezuela, Vietnam

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Source: JLL (2006)

**Competitiveness indicators**

A range of economic, social, institutional and technology competitiveness indicators released annually by the World Economic Forum were used (WEF, 2007). These global competitiveness indicators for 2006-07 are assessed for 125 countries by WEF and scored on a 1 to 7 basis for 93 competitiveness indicators. These indicators are in twelve categories:

- global competitiveness
- infrastructure (6 sub-categories)
- institutions (6)
- macroeconomy (6)
- health and primary education (9)

- higher education and training (7)
- market efficiency (23)
- business sophistication (8)
- technology (7)
- innovation (8)
- environment (5)
- basic indicators (3).

The WEF overall global competitiveness ratings for selected countries were:

#1: Switzerland	#2: Finland	#3: Sweden	#5: Singapore
#6: US	#7: Japan	#8: Germany	#10: UK
#11: Hong Kong	#18: France	#19: Australia	#26: Malaysia
#35: Thailand	#50: Indonesia	#54: China	#71: Philippines
#77: Vietnam.			

Overall, 11,200 respondents from various institutions in these 125 countries participated in developing these WEF global competitiveness indicators. For example, the number of respondents in selected countries were:

Australia (88)	US (235)	UK (72)
Japan (52)	Singapore (81)	Hong Kong (71)
France (136)	Germany (51)	Sweden (52),

with the minimum number of respondents for any country being 27.

To assess corruption in the various countries, the Transparency International Corruption Perception Index for 2006 was used (TI, 2007). This corruption index is assessed annually for 163 countries by TI on a 1 to 10 basis. Twelve surveys and expert assessments are carried out, with a minimum of three survey respondents required. 3-10 surveys were obtained per country, with respondents including the major institutions (eg: Asian Development Bank, African Development Bank, World Bank, Economist Intelligence Unit, United Nations Economic Commission).

The TI corruption ratings<sup>1</sup> for selected countries were:

#1: Finland	#5: Singapore	#6: Sweden	#9: Australia
#11: UK	#15: Hong Kong	#16: Germany	#17: Japan
#18: France	#20: US	#44: Malaysia	#63: Thailand
#70: China	#111: Vietnam	#121: Russia	#130: Indonesia

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<sup>1</sup> Lesser ranks represent lower levels of corruption.

## Analysis

Based on this JLL 2006 property market transparency and WEF/TI 2006 global competitiveness information, 54 countries were available for analysis<sup>2</sup>. The 17 specific economic, social, institutional and technology competitiveness indicators assessed were:

global competitiveness	institutions
infrastructure	macroeconomy
higher education and training	market efficiency
technology readiness	business sophistication
innovation	environment
financial markets sophistication	foreign ownership restrictions
soundness of banks	local stockmarket access
property rights	GDP per capita
corruption.	

To assess the linkages between these economic competitiveness indicators (independent variables) and property market transparency (dependent variable), the scores for the various factors per country were used. Stepwise regression and correlation analysis were used to identify the key factors in these linkage analyses. Stepwise regression is used to minimise the impact of multicollinearity amongst the 17 competitiveness indicators.

Separate linkage analyses were carried out for the following country groupings:

- Global (#countries = 54)
- Regional
  - Asia (12)                      - Europe (24)                      - Americas (12)                      - Asia Pacific (16)
- Maturity/transparency<sup>3</sup>
  - transparent (24)                      - less transparent (30)
- Europe
  - mature (15)                      - emerging (9)
- Asia-Pacific
  - mature (8)                      - emerging (8).

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<sup>2</sup> Macau and UAE omitted from 56 JLL countries assessed due to lack of equivalent WEF competitiveness information.

<sup>3</sup> “Transparent” represents highly transparent and transparent in JLL classification; “less transparent” represents semi-transparent, low transparency and opaque in JLL classification.

This enables the comparison of the linkages across regions and for the mature property markets versus emerging property markets.

## RESULTS AND DISCUSSION

### Correlation analysis

Table 3 presents the summary correlation analyses for the association between the various competitiveness indicators and property market transparency across the 54 countries assessed, as well as for the various regions, and mature and emerging property markets. Strong associations are evident across these various property markets, reflected in the large number of significant correlations with property market transparency.

**Table 3: Correlation analysis**

Model	Smallest correlation	Largest correlation	# correlations > 0.50	# significant correlations
Global	0.39	.84 (global competitiveness)	94% (16/17)	100% (17/17)
Asia	0.42	.90 (corruption)	88% (15/17)	88% (15/17)
Europe	0.57	.87 (global competitiveness)	100% (17/17)	100% (17/17)
Americas	0.17	.91 (technology)	82% (14/17)	82% (14/17)
Asia-Pacific	0.28	.93 (corruption)	88% (15/17)	88% (15/17)
Transparent	0.12	.58 (financial markets sophistication)	29% (5/17)	35% (6/17)
Less transparent	0.16	.72 (higher education and training)	47% (8/17)	65% (11/17)
Europe: mature	0.17	.68 (business sophistication)	65% (11/17)	65% (11/17)
Europe: emerging	-0.16	.74 (higher education and training)	35% (6/17)	18% (3/17)
Asia-Pacific: mature	-0.53	.63 (corruption)	41% (7/17)	18% (3/17)
Asia-Pacific: emerging	0.12	.81 (higher education and training)	65% (11/17)	59% (10/17)

At the global level, across all 54 property markets, the “macro” measure of global competitiveness had the largest correlation with property market transparency ( $r=0.84$ ), reflecting the strong link between the property markets and economic/institutional/social/technology factors; with all 17 factors being significantly correlated with property market transparency. Differences between regions were also evident; with the indicators with the largest correlations being:

- Asia: corruption ( $r=0.90$ )
- Europe: global competitiveness ( $r=0.87$ )
- Americas: technology ( $r=0.91$ ).

Similarly, for the transparent markets (financial markets sophistication;  $r=0.58$ ) and the less transparent markets (higher education and training;  $r=0.72$ ), these were the largest correlations amongst the various indicators. Differences were also evident between the transparent and non-transparent property markets both within Europe and the Asia-Pacific. In each case, a large number of other factors were also seen to be significantly correlated with property market transparency.

## Linkage analysis

To identify the linkages between the various economic/social/institutional/technology indicators, Table 4 presents the stepwise regression models at the global level, as well as for the various regions and levels of maturity in the property markets. While these regression models do not imply cause and effect, they do give an indication of the key drivers regarding property market transparency in these various global markets. At the global level, across all 54 property markets, the key linkages were with global competitiveness, financial markets sophistication, and higher education and training ( $R^2=0.78$ ); with all of these indicators having practical significance in terms of their relationship with property market transparency.

In the case of the three regions (Asia, Europe, Americas), only one factor was needed to capture key differences in property market transparency; namely Asia (corruption;  $R^2=0.79$ ), Europe (global competitiveness;  $R^2=0.74$ ) and Americas (GDP per capita;  $R^2=0.81$ ). Clear differences also occurred regarding the key factors for the transparent and less transparent property markets; in particular, the transparent/mature property markets were dominated in each case by the sophistication of the financial markets and the business sector, whereas the less transparent/emerging markets were dominated in each case by the quality of higher education and training. Again, this makes practical sense, given the differing stages of development and sophistication in these various global markets. In particular, the less transparent markets having the quality of higher education and training as a key factor is expected, as many of these markets do not have a history of higher education and training in the areas relevant to the property industry (eg: property, finance), often seeing a reliance on property professionals from the more mature property markets in the early stages of their property market development and maturity. All models



showed significant  $R^2$  values, ranging from  $R^2=0.31$  (transparent markets) to  $R^2=0.90$  (Asia-Pacific: mature markets).

**Table 4: Step-wise regression analysis: key factors**

<b>Model</b>	<b>Variables included</b>	<b>Adj. <math>R^2</math></b>
<b>Global</b>	Global competitiveness, financial market sophistication, higher education and training	0.78
<b>Asia</b>	Corruption	0.79
<b>Europe</b>	Global competitiveness	0.74
<b>Americas</b>	GDP per capita	0.81
<b>Asia-Pacific</b>	Corruption, financial markets sophistication	0.89
<b>Transparent</b>	Financial markets sophistication	0.31
<b>Less transparent</b>	Higher education and training	0.50
<b>Europe: mature</b>	Business sophistication	0.42
<b>Europe: emerging</b>	Higher education and training	0.48
<b>Asia-Pacific: mature</b>	Banks, GDP per capita	0.90
<b>Asia-Pacific: emerging</b>	Higher education and training	0.61

## CONCLUSION

This paper has provided quantitative insights regarding the linkages between property market transparency/maturity and various economic, social, institutional and technology factors across 54 countries. Clear differences have been evident across the various regions, as well as between the mature and emerging property markets.

These relationships have provided insights into linkages to property market transparency, with this taking on increased importance in the recent environment of an increased appetite for international property by the major institutional investors and pension funds. These relationships will take on further importance, given the current global credit crisis which has impacted on most property markets in 2007-08. These insights are further reinforced by other recent important international property developments including:

- EPRA<sup>4</sup> emerging property markets index to be introduced in 2008, involving 22 emerging markets including China, India, Thailand, Malaysia, Brazil, Russia and Indonesia
- IPD<sup>5</sup> global property index and an expanded range of IPD country/regional property indices (eg: Japan, Korea).

This will further increase the level of property information available to institutional investors to make more informed decisions regarding their international property investment decision-making.

## REFERENCES

Adair, A., S. Allen, J. Berry and S. McGreal (2006), Central and Eastern European property investment markets. *Journal of Property Investment and Finance*, 24, 211-220.

AME Capital (2008), Global REIT Research: December 2007. AME Capital, London.

Bond, S., A. Karolyi and A. Sanders (2003), International real estate returns: a multifactor, multicountry approach. *Real Estate Economics*, 31, 481-500.

Brounen, D., Cools, T. and M. Schweizer (2001), Information transparency pays: evidence from European property shares. *Real Estate Finance*, Summer, 39-49.

Brounen, D., Op't Veld, H. and Raitio, V. (2007), Transparency in the European non-listed real estate funds market. *Journal of Real Estate Portfolio Management*, 13, 107-118.

Chin, W., P. Dent and C. Roberts (2006), An exploratory analysis of barriers to investment and market maturity in South East Asian cities. *Journal of Real Estate Portfolio Management*, 12, 49-58.

De Wit, I. and Van Dijk, R. (2003), The global determinants of direct office real estate returns. *Journal of Real Estate Finance and Economics*, 26, 27-45.

Eichholtz, P., Huisman, R., Koedick, K. and Schuin, L. (1998), Continental factors in international real estate returns. *Real Estate Economics*, 26, 493-509.

EPRA (2008), Global Real Estate Universe. EPRA News (March), 34.

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<sup>4</sup> EPRA = European Public Real Estate Association

<sup>5</sup> IPD = Investment Property Databank

- Gelos, R. and Wei, S.J. (2002), Transparency and International Investor Behaviour. IMF, Washington.
- Hamelink, F. and Hoesli, M. (2004), What factors determine international real estate security returns? *Real Estate Economics*, 32, 437-462.
- Hoesli, M., J. Lekander and W. Witkiewicz (2004), International evidence on real estate as a portfolio diversifier. *Journal of Real Estate Research*, 26, 165-206.
- Jin, C., Grissom, T. and Ziobrowski, A. (2007), The mixed-asset portfolio for Asia Pacific markets. *Journal of Real Estate Portfolio Management*, 13, 249-256.
- Jones Lang LaSalle (2006), Real Estate Transparency Index. JLL, Chicago.
- Jones Lang LaSalle (2007), Global Real Estate Capital: Moving Further and Faster. JLL, London.
- Lim, L.C., S. McGreal and J. Webb (2006), Perceptions of real estate investment opportunities in Central/South America and Africa. *Journal of Real Estate Portfolio Management*, 12, 261-276.
- Ling, D. and A. Naranjo (2002), Commercial real estate returns performance: a cross-country analysis. *Journal of Real Estate Finance and Economics*, 24, 119-142.
- Lizieri, C., McAllister, P. and Ward, C. (2003), Continental shift: an analysis of convergence trends in European real estate. *Journal of Real Estate Research*, 13, 369-381.
- McAllister, P. and Lizieri, C. (2006), Monetary integration and real estate markets: the impact of Euro on European real estate equities. *Journal of Property Research*, 23, 281-303.
- Matysiak, G. and Tsolacos, S. (2003), Identifying short-term leading indicators for real estate rental performance. *Journal of Property Investment and Finance*, 21, 212-232.
- Moss, A. and Hughes, F. (2007), Global and global REIT funds update. EPRA News (December), 13-18.
- Newell, G., Chau, K.W., Wong, S.K. and McKinnell, K. (2005), The dynamics of the direct and indirect real estate markets in China. *Journal of Real Estate Portfolio Management*, 11, 263-280.
- Newell, G. and Higgins, D. (1996), Impact of leading economic indicators on commercial property performance. *The Valuer and Land Economist*, 34, 138-144.

Newell, G. and Kamineni, R. (2007), The significance and performance of real estate markets in India. *Journal of Real Estate Portfolio Management*, 13, 161-192.

Newell, G., Liow, K.H., Ooi, J. and Zhu, H. (2005), The impact of information transparency and market capitalisation on out-performance in Asian property companies. *Pacific Rim Property Research Journal*, 11, 393-411.

Ng, B.F. and Higgins, D. (2007), Modelling the commercial property market: an empirical study of the Singapore office market. *Pacific Rim Property Research Journal*, 13, 176-193.

Transparency International (2007), Transparency International Corruption Perceptions Index 2006. TI, Berlin.

World Economic Forum (2007), The Global Competitiveness Report 2006-2007. WEF, Geneva.