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SUMMARY REPORT

Unravelling Liquidity In International Commercial Real Estate Markets

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Unravelling Liquidity In International Commercial Real Estate Markets

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Unravelling Liquidity In International Commercial Real Estate Markets

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Unravelling Liquidity In International Commercial Real Estate Markets

1. BACKGROUND AND CONTEXT

This study investigates how transaction processes and activity vary for private real estate markets in a range of international markets. Twenty-six countries were selected for analysis, providing diversity both geographically and in terms of real estate market maturity. A qualitative exercise was undertaken to investigate transaction processes, including a questionnaire that generated primary data on processes and costs in different markets. A quantitative exercise explored how transaction activity varies across different cities in these countries and whether pricing (yields) in each city could be explained by variations in liquidity indicators, as well as by fundamental drivers. This summary report sets out the findings from these different exercises.

In the last two decades, institutional investors have increased their portfolio allocations to foreign real estate markets. In turn, for the host markets, foreign investors are widely perceived to have a positive impact on commercial real estate prices. Buying and selling private real estate assets in any market takes time and presents significant direct and indirect transaction costs for investors. However, indirect costs, such as search and information costs, tend to be greater for foreign investors in particular. Furthermore, liquidity can be an important factor when choosing where to invest. Key determinants and/or consequences of liquidity, such as transfer taxes, brokerage and legal fees, transaction times and processes, transaction volumes and market transparency, vary between and within markets over time. Yet, despite the shift towards internationalisation of portfolios, there has been little published research on variations in liquidity across commercial real estate markets.

Liquidity is essentially measured in terms of the time and costs associated with exchanging cash for specific assets, or vice versa, at prevailing market prices. Risks arise from uncertainties regarding when a transaction will be completed and how much will be exchanged. For all real estate investors, the ability to enter and exit real estate markets is constrained by the time transactions take and the challenges in matching buyers and sellers with appropriate assets at appropriate prices. For buyers and sellers, this can give rise to significant opportunity costs if investment or disinvestment is delayed. For sellers, uncertainty about the timing and amount of capital to be received adds to the volatility of expected returns. Further, the same grade of asset may be illiquid from the seller's perspective yet liquid from the buyer's perspective. This suggests linked, but separate, concepts of buyer and seller liquidity. When investing internationally, the risks may be heightened by reduced familiarity with relevant transaction processes and local performance drivers in each case.

2. TRANSACTION COSTS, PROCESSES AND BROKERAGE MODELS

Drawing on survey responses from brokers and investment advisors in 26 countries and on detailed information from JLL's Global Real Estate Transparency Index (GRETl), as well as web-based sources, a substantial body of mainly qualitative and descriptive data was generated. The focus of this aspect of the research was to investigate international variations in the costs, times and processes for office real estate transactions. Particular attention was given to the nature of brokerage services, models and remuneration arrangements due to the paucity of comparative research in this area, despite the role of brokers/agents in the search, matching and negotiation processes. The emphasis of the survey was on understanding typical processes in the transacting of prime office buildings in each market.

Whilst there was not complete consistency among respondents, a number of clear patterns emerged from the 61 completed questionnaires analysed:

- The typical UK model of employing two brokers, representing the seller and buyer respectively, was identified in only five of the 26 markets sampled. While there were several variations, in most markets the most common brokerage model was representation of the seller by a broker only. The prevalence of the latter model in developed markets, and use of both models in some developed markets, suggests that 'custom and practice' embeds models at the local level, which then become difficult to change.

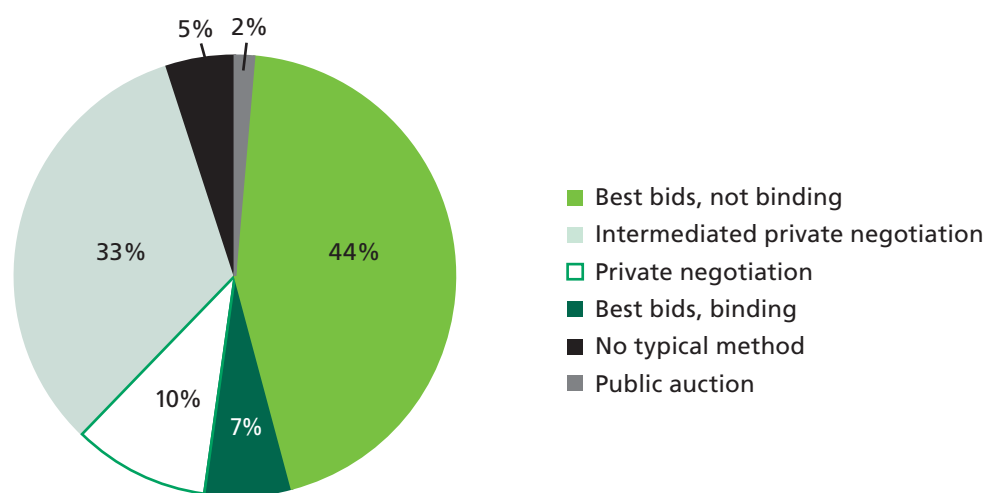
Table 2.1: Distribution of Dominant Brokerage Models Across Sample

Brokerage Model	Countries
1 broker: represents seller only	Australia, Bulgaria, Mexico, Nigeria, Russia, Singapore, South Africa, South Korea, Kuwait, Sweden, USA
2 brokers: 1 buyer / 1 seller	Netherlands, Poland, Romania, Spain, UK
1 broker: represents both	China, Hong Kong
No broker	UAE, Ghana
Mix of models reported by respondents	Brazil, France, Germany, India, Japan, Panama

- In terms of method of sale, there was a distinction between markets that used first price sealed bid auction ('best bids') and intermediated private negotiation. However, it was difficult to identify any notable patterns. Many countries have a dominant approach. For instance, in the UK, South Korea and Germany the dominant approach is non-binding best bids. In Spain, France and India, it is intermediated private negotiation. In 10 out of 26 countries, there was no dominant method of transacting sales with both non-binding best bids and intermediate private negotiation being common.

2. TRANSACTION COSTS, PROCESSES AND BROKERAGE MODELS

Figure 2.1: Most Commonly Adopted Method of Sale



- A striking feature from the survey responses was that percentage of price commission for brokers was practically universal as a model of remuneration (see Table 2.1). This is despite the fact that there may be little relationship between fees and the costs of service delivery in such an approach. While there are embryonic challenges in some residential markets to such models, ad valorem fees appear to be present for brokerage services in nearly all real estate investment markets. However, the level of quoted fees varied across markets: 1% of sale price was typical as a seller's commission, but this varied, in some case quite substantially, within and across markets.

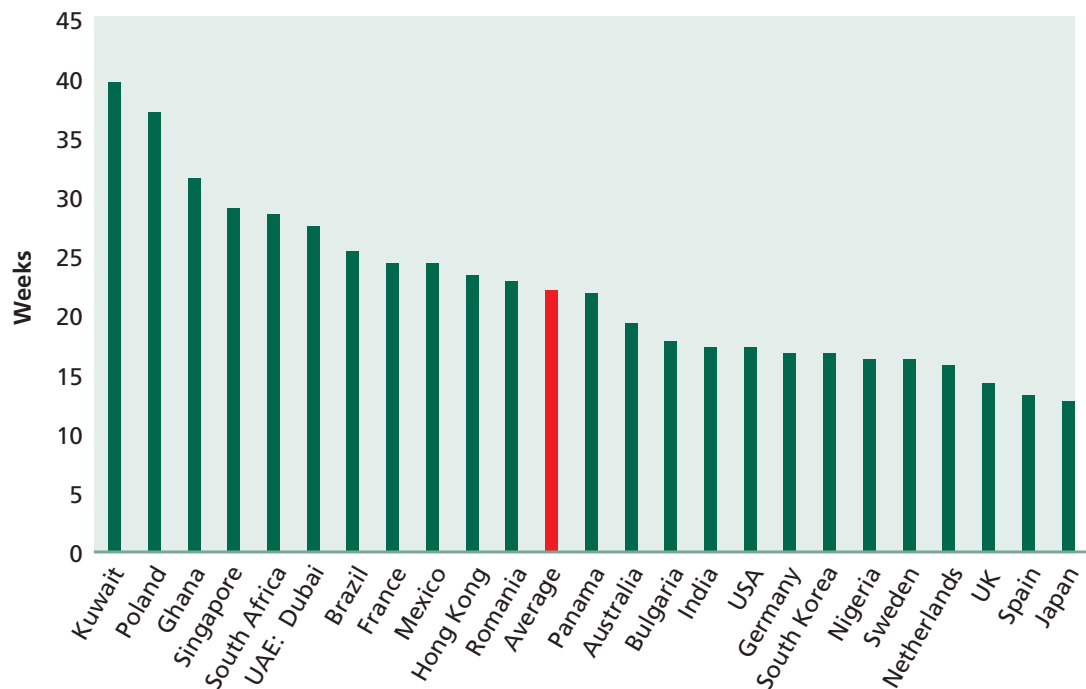
Table 2.2: Typical Approach to Calculating Brokerage Fee (%)

Typical method	Buyers	Sellers
Based on time	0.0	0.0
Fixed payment	18.3	1.6
As percentage of price	65.0	91.8
Combination of approaches	16.7	6.6

- Commonality in the bundle of services offered by brokers in different countries, including, as applicable, advice on indicative asking/purchase price, method of sale, marketing strategy, marketing, asset valuation, negotiations, due diligence and contract support, was notable from the responses provided by both buyers' and sellers' brokers.
- Time-to-transact consisted of a number of stages: marketing and negotiation, due diligence and contractual agreement and closure. It was unusual to see transactions completed in less than two to three months. The shortest average times to transact were found in the Japanese (12.5 weeks), Spanish (13 weeks) and UK (14 weeks) markets, although, clearly, the times for individual assets vary around these averages. The overall average time to transact across all markets studied was 22 weeks.

2. TRANSACTION COSTS, PROCESSES AND BROKERAGE MODELS

Figure 2.2: Average Time to Transact



- Transfer taxes are almost universally payable by the purchaser of a real estate investment asset and these taxes generally comprise the largest element of direct transaction costs. Many developed markets recorded high purchaser's costs, but for others these were relatively low. However, there was no simple high tax economy versus low tax economy divide – for example, Sweden (a relatively high tax economy) was reported to have the lowest overall purchaser costs.

3. VARIATION OF TRANSACTION ACTIVITY BETWEEN MARKETS

Prior to exploring how measures of either transaction activity or transaction processes affect market pricing, quantitative data was collected and a descriptive analysis of transaction activity in different cities was conducted. This analysis was performed at city rather than country level since real estate market indicators are more widely available at the city level.

Real estate market indicators were provided by CBRE. These included prime yield and rent for the office market in each city and estimates of the size of the total office stock¹. Transaction activity measures were supplied by Real Capital Analytics (RCA) or derived using their data. RCA provided quarterly data for each city on the number of office transactions, the value of those transactions and the physical amount of office floorspace traded from Q1 2007 to Q1 2015, noting that floorspace was captured for most transactions in the RCA database but not all. Economic indicators were collected from a variety of established sources for macroeconomic data.

Turnover rates are a common metric of relative differences in liquidity for most asset classes. For this study, turnover rates were measured in two ways. First, for each city in each period, the total floorspace of offices traded, as recorded by RCA, was divided by the total office floorspace, as estimated by CBRE.

In other words:

$$\frac{\text{Floorspace traded}_{i,t}}{\text{Stock}_{i,t}} \times 100$$

As floorspace figures were not recorded for all transactions and as volumes are conventionally discussed in value and not floorspace terms, the value of transactions in each period, as recorded by RCA, was also divided by an estimate of the value of the office stock produced by the research authors. The turnover rate was then computed in the following manner:

$$\frac{\text{Volume of deals}_{i,t}}{\text{Value of stock}_{i,t}} \times 100$$

Looking firstly at transaction volumes, it can be seen from Table 3.1 that the most prominent cities in the global economic hierarchy tend to have the highest levels of activity in absolute terms. London, New York, Tokyo and Paris account for nearly 50% of office transaction volume in this sample of cities. With the exception of Paris, each features in the top six of all the global city rankings presented. Seoul, Chicago and Boston all have high average volumes as well and perform strongly in these rankings.

¹ The only exceptions to this in the data were Tokyo and Osaka, where rents and stock were provided by CBRE and yields were sourced from the ARES Japan Property Index and used with the permission of ARES.

3. VARIATION OF TRANSACTION ACTIVITY BETWEEN MARKETS

Table 3.1: Office Transaction Volumes and Global City Rankings

	Office transaction volume	Global Economic Power Index	Global Cities Competitiveness Index	Global Cities Index	Global Financial Centres Index GFCI 18
1	London	Tokyo	New York	New York	London
2	New York	New York	London	London	New York
3	Tokyo	London	Singapore	Paris	Hong Kong
4	Paris	Chicago	Paris	Tokyo	Singapore
5	Los Angeles	Paris	Hong Kong	Hong Kong	Tokyo
6	Seoul	Boston	Tokyo	Los Angeles	Seoul
7	San Francisco	Hong Kong	Zurich	Chicago	Zurich
8	Sydney	Osaka	Washington	Seoul	Toronto
9	Boston	Washington	Chicago	Brussels	San Francisco
10	Chicago	Seoul	Boston	Washington	Washington

The Global Economic Power Index is produced by the Martin Prosperity Institute and the Global Cities Competitiveness Index is produced by The Economist. The Global Cities Index is produced by AT Kearney while the Global Financial Centres Index is produced by Z/Yen.

Note: Brussels, Zurich and Toronto are not included in the markets sampled in this study.

The average transaction volume for London by itself was nearly as high as for the bottom 20 cities in the sample combined. This included cities such as Munich, Melbourne, Madrid, Osaka, Amsterdam, Warsaw, Barcelona and, perhaps unexpectedly, Hong Kong. While there are issues in conflating volume and liquidity without controlling for the size of each market, a ranking of the cities in terms of transaction volume provides a useful measure of liquidity. Essentially, markets with high volumes and strong global city rankings tend to have relatively large pools of buyers and sellers, advisors, assets and information. Consequently, it is likely to be easier to buy and sell in these leading global cities.

Figure 3.1 shows the average turnover rate across all cities for each quarter of the period studied. The patterns illustrated by each set of turnover rates are consistent with the other. The turnover rates do not rise as markedly as transaction volumes in the latter half of the period studied. This suggests that the increase in volumes is driven, in part, by rising prices, not simply by activity levels.

3. VARIATION OF TRANSACTION ACTIVITY BETWEEN MARKETS

Figure 3.1: Average Turnover Rate (%), Q1 2007 – Q1 2015

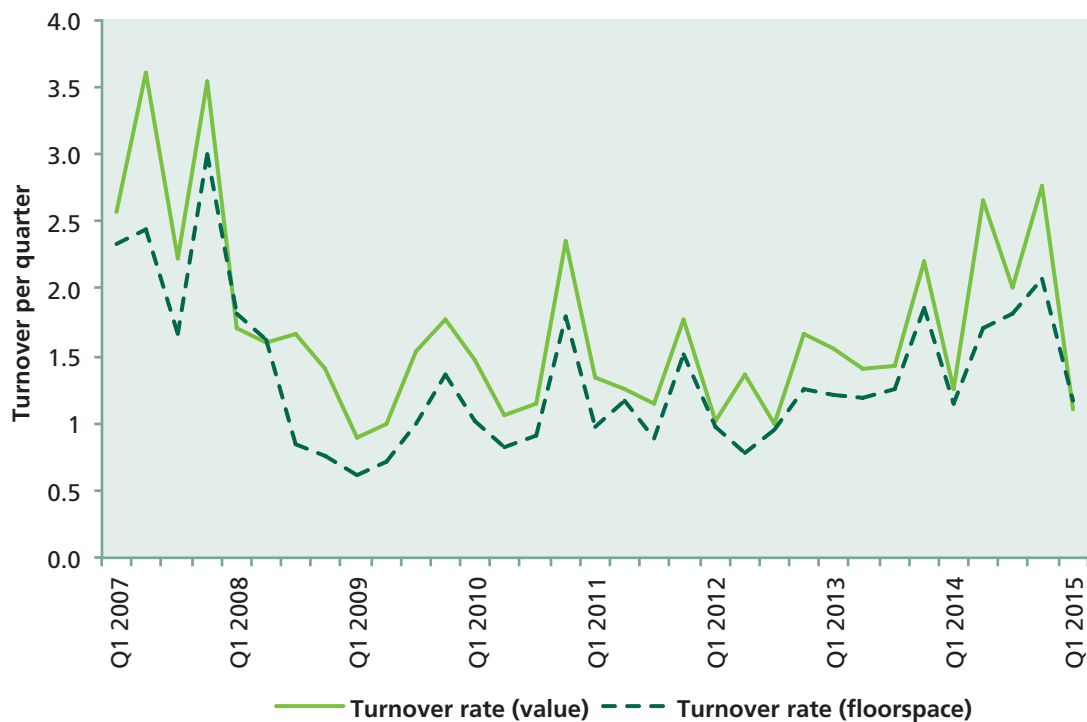


Table 3.2 presents the average turnover rates on a city-by-city basis. In terms of turnover rate based on value, the average turnover ratio was estimated to be 2.2% per quarter across the sample of cities studied, equating to approximately 9.0% per annum. However, there was substantial variation around this average. For most cities, the estimated turnover rates for value of assets transacted were higher than those for physical area of space transacted. This suggests that higher value assets experienced higher turnover levels. Nonetheless, in most cases, the differences between the measures were small, with Chicago and San Francisco being the main exceptions. The locations with the highest turnover rates were dominated by cities in the US, Australia, UK and, perhaps surprisingly, China. In contrast, it is hard to discern any notable patterns in the markets with low turnover ratios.

3. VARIATION OF TRANSACTION ACTIVITY BETWEEN MARKETS

Table 3.2: Ranking of Cities According to Annualised Turnover and Volume Measures

Average volume traded in USD billion p.a.		Average turnover p.a. based on stock value (%)		Average turnover p.a. based on sq. m. traded (%)	
London	23.9	Chicago	32.8	Seoul	21.0
New York	17.4	San Francisco	29.2	San Francisco	19.2
Tokyo	15.7	Seoul	21.5	Chicago	18.3
Paris	13.8	Beijing	16.6	Beijing	15.2
Los Angeles	5.2	Sydney	15.9	Sydney	14.5
Seoul	5.2	Melbourne	15.7	Melbourne	13.4
San Francisco	5.0	Boston	14.5	Boston	10.6
Sydney	4.4	Los Angeles	13.8	London	9.5
Boston	4.4	Manchester	11.4	Manchester	8.9
Chicago	4.3	London	10.1	Los Angeles	8.4
Singapore	4.0	New York	9.0	Washington DC	7.4
Shanghai	3.9	Washington DC	8.9	Shanghai	7.3
Frankfurt	3.9	Shanghai	8.3	Warsaw	6.3
Beijing	3.6	Warsaw	7.4	New York	5.9
Stockholm	3.5	Frankfurt	6.8	Singapore	5.5
Washington DC	3.3	Singapore	6.4	Frankfurt	4.4
Moscow	3.1	Stockholm	6.3	Istanbul	4.2
Hong Kong	3.0	Gothenburg	5.3	Moscow	3.9
Munich	2.7	Moscow	5.1	Stockholm	3.9
Melbourne	2.5	Tokyo	4.4	Amsterdam	3.5
Berlin	2.4	Amsterdam	4.3	Hong Kong	3.4
Madrid	2.1	Barcelona	3.6	Osaka	3.2
Osaka	1.6	Berlin	3.6	Barcelona	2.8
Amsterdam	1.4	Munich	3.2	Paris	2.6
Warsaw	1.2	Rotterdam	3.2	St Petersburg	2.6
Barcelona	0.8	Paris	3.2	Madrid	2.5
Manchester	0.8	Hong Kong	3.1	Tokyo	2.4
Rotterdam	0.6	Osaka	3.1	Berlin	2.3
Gothenburg	0.6	Madrid	2.8	Munich	2.3
Lyon	0.6	Lyon	2.7	Rotterdam	2.3
Mumbai	0.5	Dubai	2.7	Lyon	2.1
Johannesburg	0.3	St Petersburg	2.0	Gothenburg	2.0
Dubai	0.3			Sofia	1.7
Istanbul	0.2			Dubai	1.5
St Petersburg	0.2				
Sofia	0.2				

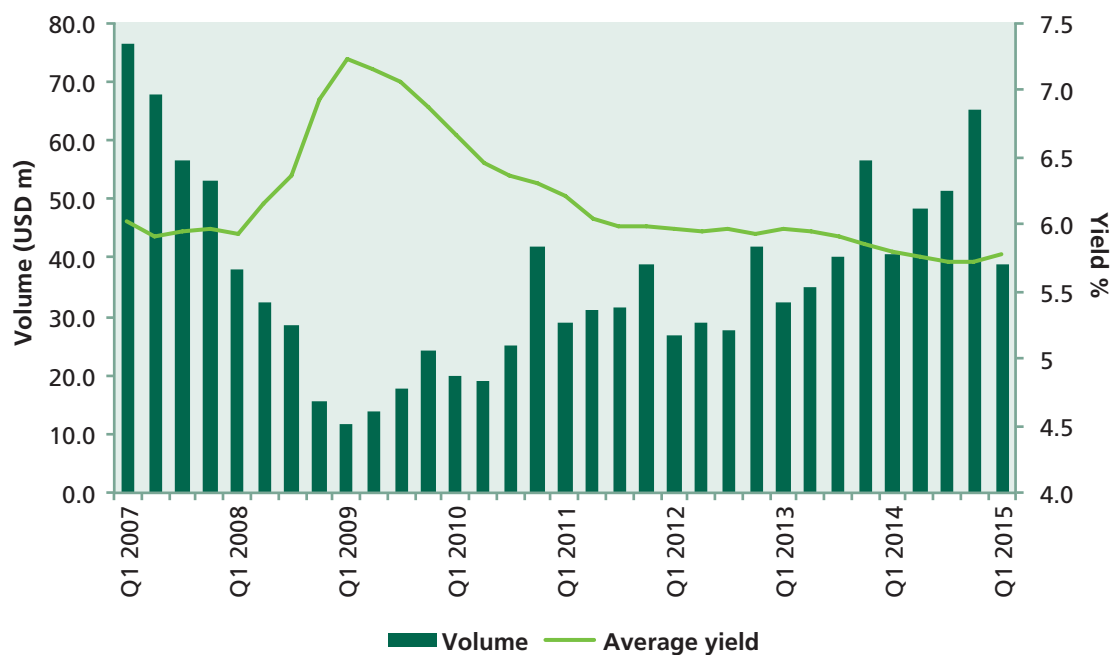
3. VARIATION OF TRANSACTION ACTIVITY BETWEEN MARKETS

Several markets that might be regarded as relatively highly liquid by investors recorded below average turnover rates. In some cases, this may be because such cities are regarded by major investors as core markets and are, therefore, more likely to be long term holds. In turn, second or third tier cities may be regarded as 'cyclical' or 'rotational' plays. This reinforces the need to distinguish between liquidity and turnover. Markets such as Tokyo, Munich and New York may have relatively low turnover rates because owners do not wish to sell rather than because they are unable to sell. Indeed, in such markets, the liquidity problem is often for buyers, who find it difficult to source suitable stock. Hong Kong registered the highest purchaser's costs in the sample, at approximately 25% of price paid, which would inhibit trading.

4. HOW ARE REAL ESTATE YIELDS AFFECTED BY MARKET LIQUIDITY?

The study period includes the peak of the pre-Global Financial Crisis boom, the sharp downturn, subsequent recovery and a recent period of positive performance across markets. Figure 4.1 shows the total value of office transactions each quarter for 36 cities (selected cities from the study's sample of countries) in US dollar terms. This starkly illustrates the association between transaction activity and pricing. The highest transaction volume was in Q1 2007 at \$76.4 billion. After this, volumes fell to a low of \$11.8 billion in Q1 2009. At the same time, the average prime office yield for these cities rose, from around 6% during 2007 to a high of 7.24% by Q1 2009. From the middle of 2009 onwards, falling yields and rising transaction volumes can be observed. Prime office yields fell to their pre-crisis levels by mid-2011 and fell further after this point, though individual cities did not necessarily follow this pattern. Volumes also recovered to a high of \$65.4 billion by Q4 2014.

Figure 4.1: Transaction Volumes and Yields, Q1 2007 – Q1 2015



This simple descriptive analysis illustrates a well-known correlation between prices and transaction activity. However, it does not establish causation. For instance, liquidity and yields might be jointly determined by a common set of variables, e.g. a city's global economic importance, returns on competing assets, general perceptions of risk and so on. It is necessary, therefore, to separate the effects of liquidity from the effects of other factors on office yields. Researchers are also faced with the perennial problem of reverse causality. Does volume or turnover determine yield or does yield determine volume and turnover?

4. HOW ARE REAL ESTATE YIELDS AFFECTED BY MARKET LIQUIDITY?

Regression is the standard approach to identifying how and whether various factors affect a dependent variable in the presence of multiple potential determinants. To counteract the problems outlined above, the researchers used a two-stage panel regression procedure:

- **Stage 1:** identifies the component of a city's yield that is not explained by the standard model of yield determination. This model includes proxies for risk free rates, risk premiums and future expectations of cash flow growth, as well as city fixed effects. The fixed effect captures sources of market-specific, time-independent variation in yields. For example, a city may have specific regulatory regimes, physical constraints, property taxes, etc., that are not explicitly included in the model specification. The fixed effect reflects a location-specific, average level of yield over time. The remaining residual error then incorporates all remaining variation in yields that is not explained by either the fixed effects or changes in market fundamentals.
- **Stage 2:** The next uses the residual from Stage 1 (i.e. the unexplained component of yield) as a dependent variable and either transaction volumes or turnover rates as independent variables in order to assess the effects over time of transaction activity on yields.

In terms of changes to yield over time, the results from Stage 2 showed statistically significant effects, suggesting that a 100% increase in transaction volume produces a fall in yields of between 10 and 15 basis points. Although seemingly large, such shifts in transaction volume on a quarter-to-quarter basis are not unusual. The results for the turnover rate models were weaker and inconsistent. Simple graphs and bivariate correlations also suggested stronger relationships with absolute measures of transaction activity than relative measures.

In a further step, the research examined whether coefficients for the fixed effects were related to measures such as transaction costs and quality of transaction processes, because the fixed effect coefficients capture the long-term differences in yields between locations and, among other things, these may result from long-term differences in liquidity between these markets.

Some interesting relationships appeared between the fixed effects and various liquidity variables. The coefficients were positively correlated with average transaction volumes, but not with average turnover rates, reinforcing findings from the descriptive analysis. There were strong correlations between the coefficients and composite measures of both market transparency (GRET1) and ease of doing transactions (World Bank). However, there was little correspondence with average time to transact or the levels of transaction costs. This does not mean that the latter variables were unimportant, but they were not dominant factors in determining premiums or discounts for individual markets versus London as a benchmark location.

5. KEY FINDINGS

- Although the time and costs associated with transacting are at its core, liquidity is a difficult concept to define. Its different facets have varying levels of importance for different real estate investors, depending on their investment objectives and horizons. Liquidity can also vary depending on whether investors are buying or selling.
- The research shows that, internationally, markets differ in their transaction times, costs and processes. The average time-to-transact is approximately 22 weeks, with a range among the sampled markets of between 12 and 39 weeks.
- Whilst ad valorem fee structures for brokers are ubiquitous, the range of quoted fees is quite large. Different transaction methods (principally private negotiation or best bids) and brokerage arrangements (mainly single broker only or two broker models) are used in different markets.
- As anticipated, leading global cities with large pools of assets, principals, advisors and information have the highest levels of absolute transaction activity. Absolute transaction volumes appear to provide a useful proxy for liquidity.
- A statistically significant relationship between increased transaction volumes and yields was found with a 100% increase in transaction volumes causing prime office yields to fall by between 10 and 15 basis points. In contrast, little evidence was found of a significant relationship between turnover rates and yields.
- Transaction volumes and indicators of the quality of real estate market institutions are strongly correlated with city-specific yield premiums and discounts (measured relative to a benchmark city).





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