



Real value in a changing world

Jones Lang LaSalle European Forecasting Services

July 2010

Market Knowledge *Applied* Real Estate Forecasting



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1 Jones Lang LaSalle Commercial Real Estate Forecasts

1.1 Background

Jones Lang LaSalle was one of the pioneers in using modern quantitative research methods for the analysis of commercial real estate markets in the late 1970s, which went on to revolutionise the sector first in the UK and then throughout Europe. Jones Lang LaSalle began producing econometric forecasts for commercial real estate in the mid 1980s to support strategy work for investor clients. Since then we have been continually producing regular forecasts for the industry.

Our forecasts are based on our proprietary real estate data series, one of the longest data series of consistent methodology and source in the industry, with some data series for core markets in UK, France, Germany and the Netherlands going back almost 40 years.

1.2 Jones Lang LaSalle Forecasting Services in 2010

Jones Lang LaSalle have continually improved and changed the way we produce forecasts in reaction to changing market conditions and client demand. In 2009 we have undergone a change to our forecasting process by outsourcing the technical elements of our forecasting to Oxford Economics, one of the leading global economic forecasting houses. We appointed Oxford Economics to revise our forecasting models and to take responsibility for running those models with the latest Jones Lang LaSalle property data and to manage their revision and adaptation to reflect changing market conditions. Jones Lang LaSalle retains the overall management of the process and ownership of the outputs.

We believe that by outsourcing the technical elements, our forecasts have gained a new level of quality and academic rigour whilst retaining their foundation in real market conditions, based on our knowledge of investment and leasing transactional activity. This provides us with a unique offering and a clear advantage over our competitors. We now have a dedicated economic forecasting team working around the year on building and refining models, producing enhancements and staying at the very edge of the latest innovations in both the academic and commercial forecasting world. We obtain feedback on our forecasts from Jones Lang LaSalle Capital Markets, Leasing and Research teams in every local market and for each sector. This is backed up by a regional input from our Pan-European centralised teams.

1.3 Testimonials From Our Clients

"The input from Jones Lang LaSalle to SWIPs European forecast process and with it their specific knowledge of local markets is vital to SWIP's European Strategic Market Review and ultimately adds confidence to the market advice given to Fund Managers."

Dr Edward Trevillion
Head of Property Research

"As in many parts of the world, JLL's European local market research, information and forecasts are first class and play a crucial role in PRUPIM's view formation and asset allocation processes."

Dr Paul McNamara
Director: Head of Research



2 Forecasting Process

2.1 Forecasting Methodology

Jones Lang LaSalle forecasts cover prime office, distribution warehousing and retail unit shop sectors for forty markets across the European region. Furthermore, we provide office supply side forecasts covering the entire market. Jones Lang LaSalle produces a single set of forecasts: the forecasts we present here are the same forecasts we use to advise capital markets clients and our corporate clients both regional and global, they underlie our cash flow assumptions for both valuations and capital markets, they provide a background for our market leading research publication schedule and input into to our own internal business reporting and strategy.

2.1.1 Office Rents

Office rents are forecast as a function of supply and demand variables using Jones Lang LaSalle supply side historical data and a variety of demand side variables supplied by Oxford Economics (see 2.1.4). Oxford Economics forecasts real office rental levels. Error correction models are used for the majority of office city level forecasts but not all. Forecast models for office rents fall into three types:

- **Type 1:** Error Correction Model: dynamic model of long and short-run effects for each explanatory variable (i.e. employment, stocks and productivity).
- **Type 2:** Dynamic Model Using Lagged Office Rents (Non-Error Correction Model): This means, for example, a change in employment in one period will continue to have an effect in future periods. So there are long and short run effects too, but here the relationship between the long and short run is the same for all variables. This type of model is not as appealing or complete as an Error Correction Model but has been used where we could not obtain a good Error Correction Model and where it produced a better outcome than the non-dynamic model (below).
- **Type 3:** Non-Dynamic Models: Where on the right-hand-side of the equation there are demand/supply variables only i.e. no lag of office rents. This is a model where there is no difference between the long and short-run; that is the model moves straight to the long-run relationship.

2.1.2 Retail Unit Shops and Distribution Warehousing Rents

For both retail unit shops and distribution warehousing we forecast real changes in rents as a function of changes in demand variables. As we have no reliable direct measure of supply for either series as an alternative we produced an implied supply side constant based on the rental equations.

We made an assumption that supply growth responds to past rental growth. In the case of retail, supply growth reacts to a three year moving average of real rental growth lagged two years with an elasticity of .05 plus an estimated historical trend. In the case of warehouse supply, growth reacts to a three year moving average of real rental growth lagged one year with an elasticity of .075 plus an estimated historical trend (i.e. the reaction for warehouses is quicker and bigger than for retail).

2.1.3 All Sector Yields

The yield model for all sectors is built out of a cascading model. Net initial yields are forecast for London based on a combination of Oxford Economics' Credit Conditions Monitor index. This yield then cascades into Paris whose yield forecast is based on a combination of London's yield combined with local rental growth expectations in Paris (based on rental forecasts). This yield then cascades into other European markets. Some

markets build their forecast yield on a combination of other markets (e.g. Barcelona is a combination of Madrid and Paris) and all provide an element of local market rental growth expectations.

2.1.4 Data Inputs

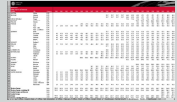

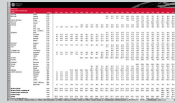

Economic Drivers Provided by Oxford Economics	Primary Real Estate Data Provided by Jones Lang LaSalle
Office Sector: Real GDP Growth Employment	Office Sector: Rents Yields Completions Vacancies Take-Up Total Stock Incentives Capital Values Gross Returns
Retail Sector: Retail GDP Growth Retail Sales Consumer Spending Implied Supply Side Measure	
Industrial Sector: Manufacturing Employment Real GCP Growth Implied Supply Side Measure	Retail Sector: Rents Yields Capital Values Gross Returns
All Sector Yields: Rental Growth Expectations Credit Conditions Index Geographical Links	Industrial Sector: Rents Yields Capital Values Gross Returns

2.2 Forecasting Process

Jones Lang LaSalle has a vital role in the forecasting process by providing property market data, giving an on the ground market view and feedback based on our local market teams in country, coordinating the overall forecasting process, providing the final data sign off, and ultimately retaining ownership of the final forecast numbers.

Forecasts are produced four times per year. Two of these forecasting rounds produce House View forecasts, these forecasts are produced with a rigorous examination of every number by local markets which are then checked by Pan-Regional teams and fed back into the forecasting models to generate final outputs. In between these House View forecasts we have two Update forecasts. These are shorter forecasting rounds and consist of a quicker sense check of the key numbers by local market teams and also incorporate the latest economic, financial and property data.

2.2.1 Forecasting Timeline

Day	Action	Outputs
1	Jones Lang LaSalle delivery latest property data to Oxford Economics.	
2		
3	Oxford Economics analyse and sense check latest Jones Lang LaSalle data for quality and consistency and raise issues with Jones Lang LaSalle.	
4		
5		
6	Jones Lang LaSalle investigate data queries with local research teams and report back to Oxford Economics.	
7		
8		
9	Oxford Economics run econometric models and produce draft forecasts.	Draft Forecasts
10		
11		
12		
13		
14		
15	House View Forecasts:	Individual Market Feedback and Call Minutes: 
16	Jones Lang LaSalle internal discussions.	
17	Includes detailed market views and calls with local Head of Capital Markets, Heads of Leasing for each sector and Heads of Research together with the Central Forecasting Team.	
18	The final feedback is sense checked for regional relativities by Pan-European teams.	
19	Comments feedback on quality of models and make adjustments to model numbers to reflect local market views.	
20		
21		
22		
23		
24		
25		
26	Oxford Economics produce final forecasts based on adjustments to models and individual market feedback.	Final Forecasts
27		
28		
29		
30		
31	Jones Lang LaSalle final check on numbers and initial analysis of data	Forecasting Synopsis
32		
33		
34		
35	Forecasts become available to clients.	
...	Continual refining of models throughout the year and project enhancements and additions. Recent examples include, incorporating incentives data into rental forecasts and investigating churn rates in take up forecasts and incorporation of Grade A rental forecasts for London markets.	

2.2.2 Forecasting Key Dates, 2010

Date	Event
Mid January	Key Data Sign Off: Q4 2009
Mid January	Forecasting Round Kick Off: Spring House View Forecasts
End January	Final All Data Sign Off: Q4 2009
Early March	Final Forecasts Sign Off: Spring House View Forecasts
Mid April	Key Data Sign Off: Q1 2010
End April	Forecasting Round Kick Off: Summer Update Forecasts
End April	Final All Data Sign Off: Q1 2010
Early June	Final Forecasts Sign Off: Summer Update Forecasts
Mid July	Key Data Sign Off: Q2 2010
End July	Final All Data Sign Off: Q2 2010
Early September	Forecasting Round Kick Off: Autumn House View Forecasts
End September	Final Forecasting Sign Off: Autumn House View Forecasts
Mid October	Key Data Sign Off: Q3 2010
End October	Forecasting Round Kick Off: Winter Update Forecasts
End October	Final All Data Sign Off: Q3 2010
Early December	Final Forecasting Sign Off: Winter Update Forecasts

Dates in bold indicate forecasting key dates, date not in bold indicate data sign off dates

Key data includes: Offices (city level): rents, yields, stock, vacancy, completions, future completions (+1, +2, +3 years), take up; Shopping Centres (country and city level): rents, yields; Retail Warehousing (country and city level): rents, yields; Retail Unit Shops (city level): rents, yields; Warehousing (city level): rents, yields, stock, vacancy, completions, future completions (+1, +2, +3 years), take up; Investment data (city level).

3 Forecasting Team

The forecasting process is run by a central forecasting team consisting of both a Core Jones Lang LaSalle research team and an Oxford Economics Team. The Core Jones Lang LaSalle team has the ultimate responsibility for producing and signing off the forecasts and also for coordinating and incorporating the feedback from local Jones Lang LaSalle offices.

Oxford Economics is one of the leading economic forecasting and advisory groups. Their experiencing in advising some of the largest companies in the world together with the world's largest and most influential central banks and inter-governmental economic organisations brings a fresh approach to forecasting within the real estate sector. The ability to tap into their forecasting models for our real estate demand side drivers together with their expertise in building and refining econometric models has brought both a robust forecasting back bone combined with some innovative approaches to forecasting to the commercial real estate sector. Their strong academic background and continuing ties with the world's leading academic institutions means our forecasts stay up to date with the latest innovations and thinking within the sector.

Jones Lang LaSalle's standing as one of the leading global real estate firms gives our forecasts grounding within the real world and within real market situations. Our Capital Markets team provides the latest knowledge on investor activity, based not only on the latest transactions within the market but also known investor appetite, under bidder information and vendor expectations. Our Leasing teams provide invaluable input into our rental forecasts based on their in-depth knowledge of local markets, both from small domestic occupiers to global corporations. Their knowledge is also informed by our occupier services team and in particular our tenant representation team. Their intimate knowledge of occupier activity and thinking gives our forecasts a more rounded view of demand.

3.1 Central Forecasting Team

The following team provides the main coordination and production role for the Jones Lang LaSalle forecasts. The team is supported by Jones Lang LaSalle's wider European Capital Markets, Leasing and Research teams.

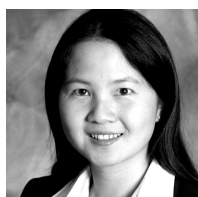
3.1.1 Core Jones Lang LaSalle Team



Alan Gardner

Associate Director, Head of Forecasting Services

Alan is Head of our Forecasting Services and works closely with Jones Lang LaSalle's investment business and the major clients of the firm. Alan previously headed up our UK Capital Markets Research and is also responsible for delivering strategic analysis for various portfolios that are managed by Jones Lang LaSalle. Alan holds an MSc(Distinction) in International Financial Markets from Southampton University.



Shirley Ghan

Senior Analyst, EMEA Research

Shirley Ghan's responsibilities include delivering analysis and forecasts for the economy and real estate markets across Europe. Prior to Jones Lang LaSalle Shirley worked at Judge Business School, Cambridge University and at the Central Bank of Malaysia. She holds an M.Phil in Real Estate Finance from Cambridge University.

3.1.2 Oxford Economics Team



Dr. Neil Blake

Director of Economic Analysis

Prior to joining Oxford Economics, Neil was in charge of economic forecasting for Experian having previously been a founding director of Business Strategies Ltd. He holds degrees from the Universities of York and Warwick and has been involved in economic forecasting for nearly twenty-five years. He has published on a wide range of subjects including economic growth, regional economic modelling, economic history and the use of survey data in economic forecasting.



Sam Moore

Director of Consulting Services

Sam Moore is Director of Consulting Services at Oxford Economics. He manages Oxford Economics' London office and is responsible for coordinating and managing many of Oxford Economics' major consultancy projects. Sam graduated from Warwick University from which he also has an MSc in Economics.



Honwae Wong

Economist

Honwae is an economist in the consultancy division of Oxford Economics. Prior to joining Oxford Economics he spent 4 years at Experian in the economic modelling team, where his work included economic impact modelling, producing UK sub-regional forecasts and bespoke forecasting. Honwae has an MSc in Economics from the University of Warwick.

4 Coverage

4.1 Market Coverage

Country	Markets / Aggregates
Austria	Vienna ¹
Belgium	Antwerp ² Brussels ²
Czech Republic	Prague
Denmark	Copenhagen ³
Finland	Helsinki ³
France	Lyon Paris Paris – CBD ¹ Paris - La Défense ¹
Germany	Berlin Dusseldorf Frankfurt Hamburg Munich Stuttgart
Hungary	Budapest
Ireland	Dublin
Italy	Milan Rome
Luxembourg	Luxembourg
Netherlands	Amsterdam Rotterdam The Hague Utrecht
Norway	Oslo ³
Poland	Warsaw
Portugal	Lisbon ^{1, 3}
Romania	Bucharest ¹
Russia	Moscow
Spain	Barcelona Madrid
Sweden	Stockholm
UK	Birmingham ³ Edinburgh ³ Glasgow ³ Leeds ³ London London – City ¹ London – West End ¹ Manchester
Aggregated indexed series	Western Europe Western Europe ex. UK Central Europe and Moscow Central Europe Europe Europe ex. Moscow Eurozone Europe ex. UK Europe ex. UK and Moscow

¹ Office sector only

² Brussels and Antwerp cover the same market for distribution warehouses

³ For office sector demand side only (excludes take up, completions, vacancy rate, net absorption and total stock)

4.2 Indicators

Office	Distribution Warehousing	Unit Shops
Rental Growth	Rental Growth	Rental Growth
Rental Levels	Rental Levels	Rental Levels
Net Initial Yields	Net Initial Yields	Net Initial Yields
Capital Growth	Capital Growth	Capital Growth
Capital Values	Capital Values	Capital Values
Gross Returns	Gross Returns	Gross Returns
Completions		
Vacancy Rate		
Net Absorption		
Take Up		
Total Stock		
Vacant Stock		
Occupied Stock		
Grade A Rents¹		
Rent Free Period¹		

Note: Series in bold are forecast series, all other series are derived.

¹ Currently only covers London - West End and London - City.

5 Why Jones Lang LaSalle

5.1 Key Rationale

- Real market view on commercial real estate forecasts based on market leading Capital Markets, Leasing and Research teams in Europe
- Models built and driven by one of the world's leading economic forecasting houses
- Robust demand side drivers produced by Oxford Economics' Global Model, as used by leading global institutions, central banks and inter-governmental organisations
- Biannual House View forecasts supported by quarterly updates
- Continual assessment and refining of models and enhancements
- Single supplier of primary real estate data for all property forecasts
- Forecasts built on long run data series, up to 40 years in some cases
- Data from a single source with consistent methodology, ability to explain data with actual deals in the market
- Long history of producing forecasts for clients dating back to mid-1980s
- Same forecast series as used internally by Jones Lang LaSalle teams for advising our clients and giving guidance to our own business decisions

5.2 Why Jones Lang LaSalle

Jones Lang LaSalle Incorporated has 180 corporate offices worldwide and operations in more than 750 locations in 60 countries. We have approximately 36,200 employees, including 22,100 employees whose costs are reimbursed by our clients. We provide comprehensive integrated real estate and investment management expertise on a local, regional and global level to owner, occupier and investor clients. LaSalle Investment Management, a member of the Jones Lang LaSalle group, is one of the world's largest and most diversified real estate investment management firms, with \$37.6 billion of assets under management.

In 2008 the Firm had revenues of \$2.7 billion, the same as 2007, remained profitable and gained market share from competitors. We are the only real estate services and investment management firm to have been named:

- To Forbes magazine's Platinum 400 list in 2006, 2007 and 2008
- To Fortune magazine's 100 Best Companies To Work For list in 2007
- To CRO (Corporate Responsibility Officer) magazine's list of 100 Best Corporate Citizens in 2007 and 2009
- By the U.S. Environmental Protection Agency as a 2007 Energy Star Partner of the Year.

In addition, in October 2008 we were named both European Investment and European Office Agent of the Year at the annual European Property Awards. In both 2008 and 2009 we were designated one of the 'World's Most Ethical Companies' by the Ethisphere Institute, and our ethics program received Ethics Inside™ certification.

5.2.1 European Research

Jones Lang LaSalle's Research group produces practical proprietary market research applied directly to the real estate decision-making needs of our clients. Our mission is to create clear competitive advantage for our clients through the strategic use of accurate data, market intelligence and innovative thinking. We have 300 dedicated research professionals analysing property markets in over 60 countries around the world, 100 of those

specialists cover EMEA. Our richest research collateral is that on the London market which we have been continuously studying for almost 40 years.

Our approach is based on a mix of technical excellence and innovative creativity with our analysis being supported by one of the most comprehensive proprietary property market databases and tracking programmes worldwide. In many countries we are the primary source of baseline market statistics, while in Europe and in the UK we can draw on one of the longest-running time series of data in the industry.

5.2.2 European Capital Markets

Jones Lang LaSalle is the leading investment advisor for European real estate capital markets. Jones Lang LaSalle has over 380 investment and corporate finance professionals based in 24 European countries who cover the whole of the European and Middle East region, the team is part of a wider global capital markets capability of over 1,092 professional based in 82 markets in five continents. Since 2005 the European Capital Markets team has transacted over €115 billion in real estate sales, acquisitions and corporate finance deals. In 2009 alone Jones Lang LaSalle has conducted over 350 transactions in 17 countries worth over €11 billion with deals ranging from €1 million retail banking units sold in our Auction room in London to the €306 million Triangle de l'Arche in Paris La Defence which was sold to MACSF.

The European Capital Markets team is backed by a Pan-European team based in London who provides core client management to key European investors, coordinates and executes international marketing with local capital markets teams and develops cross-border strategies for European Investors. The European Capital Markets team transacts across all the main asset classes and includes a specialist European Retail team which covers shopping centre and retail warehousing investment across the region. The team represents clients on the buy and sell side and works for a variety of clients ranging from domestic private investors to global fund managers. Recognising the team's leading position in Europe the European Property Awards has presented Jones Lang LaSalle European Capital Markets with the European Investment Agency team of the year award for the last two years.

Key Capital Markets Transactions in 2009

Asset	Sector	Country	Price (€ millions)	Client	Type of Deal
Meadowhall	Shopping Centre	UK	650	British Land	Sale
1 Bishops Square	Office	UK	500	Oman Investment Authority	Purchase
Triangle de l'Arche	Office	France	300	TIAA	Sale
Trois Quartier	Office/Retail	France	200	Hammerson	Sale
Königsallee 37	Office	Germany	125	DEGI	Sale
Principe Pio	Shopping Centre	Spain	125	Corio	Purchase
Die Mitte	Shopping Centre	Germany	125	Hines	Sale
Aegonplein 1-50	Office	Netherlands	115	Unibail-Rodamco	Sale
Project Basket	Retail	Sweden	80	Vasakronen	Sale
Distribution Centre	Industrial	Belgium	50	Redevco	Sale

5.2.3 European Leasing and Occupier Services

Jones Lang LaSalle Agency Leasing is one of the firm's core service lines. The team executes marketing and leasing programs on behalf of investors, developers, property companies and public entities to secure tenants and negotiate leases. Globally in 2008, we completed approximately 12,800 agency leasing transactions representing approximately 17 million square metres of space. In Europe and the Middle East we have 500 leasing agents based in 57 offices in 24 countries where the team strives to be ranked number one or two in every market.

Tenant Representation, is a core part of our service offer and a specific discipline in all countries where we operate. We have over 120 specialists across the European region who work closely with our agency leasing teams. The team acquires office space, on a purchase or lease basis, negotiates lease renewals on behalf of tenants and disposes of surplus property. Globally the team comprises over 700 professionals and in 2008 completed more than 5,271 transaction assignments. The tenant representation team is incorporated into our wider Corporate Solutions business, which provides an integrated single point of contact for global occupier clients and covers six core occupier service lines.

Sample Tenant Representation Recent Track Record

Client	Country	Type of Transaction	Size
CSC	Belgium	Space Acquisition	5,500 sq m
Commerzbank	Belgium	Space Acquisition	4,000 sq m
Sun Microsystems	France	Space Acquisition	6,600 sq m
KPMG	France	Lease Renewal	5,500 sq m
Cisco	France	Lease Renewal	10,000 sq m
AIG	Germany	Space Acquisition	9,300 sq m
Exxon	Germany	Space Acquisition	7,000 sq m
TNS	Germany	Space Acquisition	9,300 sq m
Network Rail	UK	Space Acquisition	3,700 sq m
Warburg Pincas	UK	Space Acquisition	4,600 sq m

5.3 Why Oxford Economics

Oxford Economics is a world-leader in high quality, quantitative economic analysis forecasting, and in practical, evidence-based business and public policy advice. Founded in 1981 as a commercial venture with Oxford University's business college to provide economic advice, forecasts and analytical tools to international institutions, governments and blue-chip companies, they still maintain close links with the University and a range of other partner institutions. The calibre of staff is impressive, with over 60 experienced professional economists based in offices in the UK, US, France, Dubai and Singapore.

Oxford Economics provides: macro, sector and regional forecasting; Business and product market analysis; briefings for senior executives in public, private and inter-governmental sectors; Economic impact assessment and econometric model building. The Oxford Global Model, which drives the macro forecasting elements of our real estate demand side drivers, is the most widely used commercial International Macro Economic Model, with clients including the IMF and World Bank, in addition to a large number of blue-chip companies. It provides a rigorous and consistent structure for forecasting and scenario analysis.

Oxford Economics Example Clients

Private Sector	Public / Inter-Governmental Sector
Banco Santander	International Monetary Fund
GM	World Bank
BP	US Treasury
Goldman Sachs	Bank of England
IBM	European Central Bank
Swiss Re	Bank of Spain
McKinsey & Company	Bank of Thailand
Visa	World Health Organisation
BMW	Asia Development Bank
Commerzbank	Hong Kong Monetary Authority



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