

# **The Determinants of Commercial Property Market Performance**

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for the award of Doctor of Philosophy of the  
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## **CERTIFICATE**

*I certify that this thesis has not already been submitted for any degree and is not being submitted as part of candidature for any other degree.*

*I also certify that this thesis has been written by me and that any help that I have received in preparing this thesis, and all sources used, have been acknowledged in this thesis.*

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# **The Determinants of Commercial Property Market Performance**

## **ABSTRACT**

The purpose of this thesis is to critically evaluate the determinants for modelling and forecasting long-term performance in office, industrial and retail property markets and to suggest ways to improve commercial property forecasting. The research examined the three-year forecast accuracy of the most prominent property forecast model and associated determinants, and investigated the factors influencing current commercial property decisions in the rapidly changing economic environment with the major advances in globalisation, technological innovation and financial deregulation.

Forecasts are essential when making major commercial property decisions and have led to considerable emphasis being placed on formal property forecast models to determine future long-term property performance. Both the literature review and a survey of Australian property forecast organisations showed that explicit property forecasting is a relatively new predictive tool within the property industry. In addition, there appear to be insufficient theoretical considerations to present econometric theory and long-term forecast accuracy.

The information search revealed the preference in published studies for the single equation property forecast model. Accordingly, a single equation model was constructed for rents and yields in three prominent Australian property markets: Sydney CBD prime office, Sydney metropolitan prime industrial and New South Wales regional shopping centres. The property model forecasts started at December 1994, 1995 and 1996 and the forecast input determinants were an average of leading published macroeconomic forecasts from those periods. The accuracy of the property forecast model was measured by how close the three-year semi-annual forecast values were to the actual values Mean Absolute Percentage Error test (MAPE) and to the forecast values of a simple forecast model (Theil U value test).

The results showed that half the property forecast values were inaccurate when related to actual values and there was no consistency in the underlying relationship. The majority of property forecast values were also less accurate than the forecast values from the naïve forecast model. Significantly, the overall random pattern of error showed no evidence that historical time-series length and key statistical tests determined the predictive capacity of the property forecast model. The accuracy of the property forecast model process should be established on the out-of-sample analysis.

The success of the property forecast model thus appeared to depend on the forecasts of the selected macroeconomic determinants. These were then tested for forecast accuracy and revealed a consistently large forecast error over the three-year forecast periods used in this study, illustrating their limited capacity to foresee structural economic change.

Such economic changes, connected to advances in the modern economy, are reshaping business organisations, the fundamentals of space demand and, significantly, commercial property market performance. A survey of the same three markets - Sydney CBD prime office, Sydney metropolitan prime industrial and New South Wales regional shopping centres, showed that demand for space is more than a function of the macro economy, with each market involving distinct organisational, space and decision-making considerations. Market determinants such as the dominance of multi nationals, the impact of mergers and acquisitions in the office market and the relatively short time (generally less than six months) organisations spend searching for new space are absent in current property forecast research.

One procedure to determine an organisation's approach and requirement for space is to measure and benchmark the range and importance of property decision influences. The space selection process indicates the significance of diverse microeconomic characteristics, and the distinct impact of new technology on office space demand. Elsewhere the macroeconomic factors displayed some similarities across the office, industrial and retail markets.

This thesis demonstrates that structural economic change, and the influences on space demand, are important determinants when forecasting long-term commercial property market performance. It recommends that these should be included in future long-term property forecast systems, ensuring that property forecast models and selected determinants are based on post-evaluation analysis. Furthermore, and in a different medium, it suggests that structured market research must be used to identify contemporary factors and circumstances influencing the commercial property landscape. The patterns that emerge in this process are central to the property decision process and far more comprehensive than those identified in previous property forecast literature.