

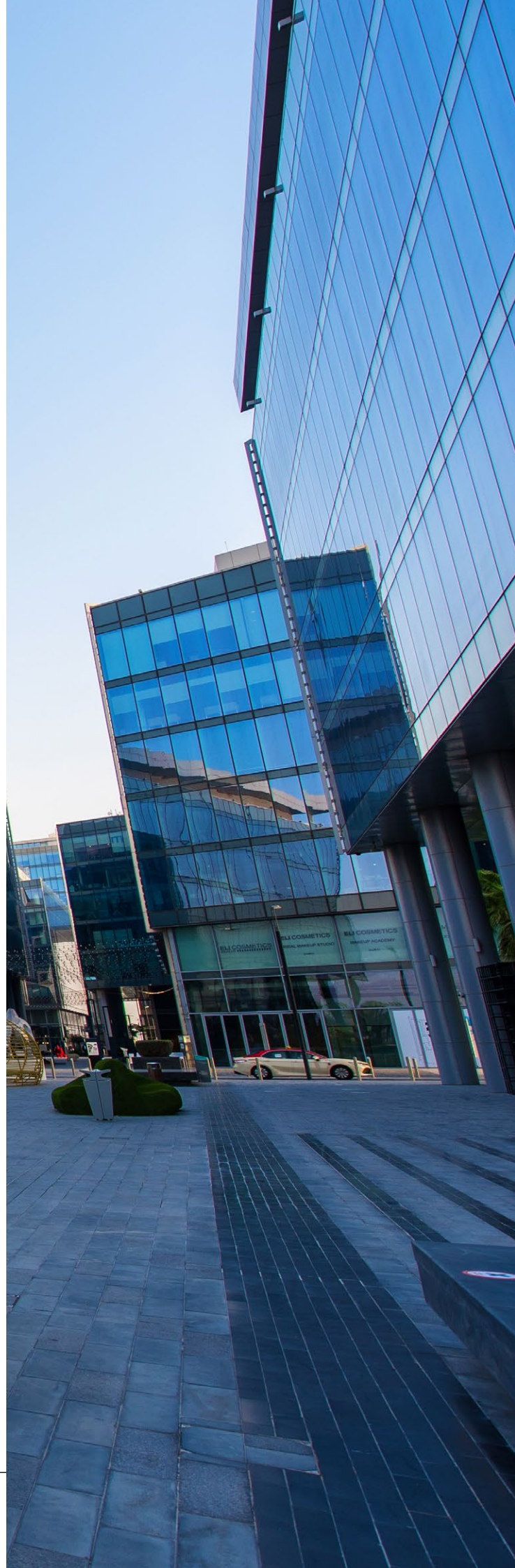
Methodologies for forecasting the UAE market

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The importance of forecasts

Every well-planned real estate investment decision is underpinned by a series of market and site-specific forecasts. For a construction project, the most important are almost inevitably the projected sales price and schedule and construction costs, whilst for an investment, it's future rents, eventual sales price, yields, and most probably financial variables such as interest rates. We hear a lot about feasibility studies, but what a good feasibility study really amounts to is a series of accurate forecasts supported by an explanatory text.

The results of poor real estate forecasting are all around us. Failed developments and unwise investments, business disruption and ultimately the bankruptcy of individual developers are the price to pay for forecasting failure. Real estate professionals need to understand how their consultants are producing the numbers on which development and investment decisions are being made.





Forecasting Methodologies

Forecasting models of the UAE market, as for any other real estate market, broadly divide into two types. On the one hand there are time series models, which rely on historical data, such as Box-Jenkins Autoregressive Integrated Moving Average (ARIMA). Time series models work best in stable markets where there are no major expected changes in market conditions.

The second type, regression models, rely on a series of independent variables which are analysed as a combination explanation of a dependent variable, such as UAE house prices. The independent variables are then separately projected and then combined to produce a forecast of the dependent variable. Hence ARIMA can be modified and combined with a vector of an explanatory variable(s) (ARIMAX), and this, along with Simple Regression (SR), Multiple Regression, and Vector Autoregression (VAR) are all examples of this approach. VAR models, for example, include more than one dependent variable and the independent variables include lags of the dependent variable from each of the equations in the model. Typical independent macro-economic variables are demographics, interest rates, GDP growth and levels of FDI, and in the case of the Abu Dhabi market to a larger degree than in Dubai, the oil price as well. Market variables include the supply pipeline and sale clearance data. All the evidence suggests that bigger, more complex models do not necessarily have greater predictive power. What really matters is ensuring that the independent variables chosen are really those driving the market, and that they will continue to do so.

The Cinderella of forecasting techniques, which is often used in the UAE, is to rely on the opinions of experts. There is nothing necessarily wrong about using this kind of qualitative technique, but it is as well to recognise that there is a world of difference between taking the advice of one expert, who may be *parti pris*, for example if they are hoping for more work if the project goes ahead, and a coherent qualitative forecasting system such as

Delphi, which although they can and have worked very well in the region, require a formal 'focus-group' setting and a modicum of actual organisational skill to be effective. Most forecasters already do use qualitative overlay processes to move away from econometric model estimates, citing mood and sentiment, but at the cost of introducing subjectivity into their forecasts as a result. This tendency has accelerated since the financial crisis, as models produced before then had a 'business-as-usual' component to them which was not reflected in parallel discussions of the likely trajectory of the market.

Evidence suggests that it is easier to forecast rents rather than yields, and that construction costs are still less of a problem. The main reason for this is that construction is essentially a short-term issue, and whilst there are exceptions, costs can be constrained through contract arrangements and stockpiling. The most difficult forecasting task of all is how to predict land prices in the medium and long term, which is an especial concern given the overall trend of rising land prices by comparison to construction costs throughout the UAE and worldwide.

Forecasters have also now stressed the importance of a global perspective on real estate markets, which certainly applies to the UAE. An appreciation of relative currency performance given the \$ peg of the dirham, global commodity prices, and trade relationships both within the region and worldwide are all exogenous factors which should make an appearance in properly constructed real estate regression models.

The final point to note is that there is strong evidence to suggest that 'by combining forecasts from different methods and sources greater predictive results can be achieved'. Certainly wise users of UAE market forecasts never rely on the output of one model, one methodology, or even one provider.



Forecasting failures

What is said publicly about methodologies is still relatively limited. For example, in their review of the real estate market in 2020, PwC said they had predominantly focused on GDP, based on the assumption that real estate will continue to form a consistent percentage of real GDP in the future. The difficulty of applying this to a market such as the UAE where economic diversification will gradually bring that percentage down is obvious.

Sometimes it is very easy to understand why firms are reluctant to publish their methodologies. Early in 2018, ANZ Bank revealed that their new model suggested the Australian market would continue to rise, albeit modestly, on the back of an Error Correction Model (ECM). The theoretical benefit of ECM models is that they explicitly highlight the market's role to remove demand and supply imbalances resulting in a market equilibrium. The ANZ model included an equation that included a 'revert to trend' term, the lagged growth rate of house prices, changes in housing investment, gross incomes and the average mortgage interest rate. The model had excellent retrospective correlation properties – i.e. it explained the past very well indeed. It however failed to predict the dramatic fall in Australian property prices over the past year.

When a regression model of this kind fails, the answer is certainly not to throw up one's hands and say, if an organisation with the resources of ANZ Bank and with every reason to seek accuracy in its view of the market can get it so wrong, what chance do we have? It is to ask carefully where the model went wrong, and learn from the experience. Sometimes it is a failing of data: in the past, data for the UAE was inadequate, but with services such as Property Monitor now available, there are now plenty of real estate data to use. Macroeconomic statistics are equally important, and these are also now available in long time series. In this case, though, it looks strongly as if auto-regressive trend modelling ended up producing a 'business-as-usual' result which did not incorporate the effect of continued apartment over-supply, political threats to generous tax breaks and a flat macro-economic outlook for which market participants were unprepared. So, whilst there are solid empirical methods to evaluate the accuracy and usefulness of forecasts, including mean squares, geometric mean, relative absolute error or mean absolute error, these can only tell a user how effective a forecast has been in the past. If what influences real estate markets changes, and those changes are not captured in a model, then the result will inevitably fail in turn to make an accurate prediction of the market.



Lessons for the market

Despite its obvious importance, forecasting is still regrettably regarded as an arcane subject. Too many developers and investors still 'pay for the pdf' and fail to pay sufficient attention to the methodologies their consultants have used, and the assumptions on which the output presented to them has been based, which are the key questions that should always be posed when the results of a model are presented.

In part this can be explained by the practical difficulties many real estate companies have in postponing decisions or cancelling planned projects when the numbers don't stack up, but in the

post-financial crisis world where we are all very much aware of the consequences of poor forecasting the importance of getting over those difficulties and making decisions based on the best possible view of the future is now increasingly accepted. The time when the kind of issues raised here can be ignored by investors, banks, developers and investors is over – and that's a good thing.

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