On Wednesday 11 November 05:00-22:00 GMT, we'll be making some site updates on Taylor & Francis Online. You'll still be able to search, browse and read our articles, where access rights already apply. Registration, purchasing, activation of tokens, eprints and other features of Your Account will be unavailable during this scheduled work.

Construction Management and Economics ›

Volume 28, 2010 - Issue 12

1,295 Views | 53 CrossRef citations to date | 0 Altmetric

PAPERS

Forecasting construction tender price index in Hong Kong using vector error correction model

James M.W. Wong & S. Thomas Ng

Pages 1255-1268 | Received 23 Oct 2009, Accepted 19 Apr 2010, Published online: 13 Dec 2010

Cite this article https://doi.org/10.1080/01446193.2010.487536

Sample our Engineering & Technology Journals

>> Sign in here to start your access to the latest two volumes for 14 days

Full Article | Figures & data | References | Citations | Metrics

Reprints & Permissions | Read this article | Share

Abstract

Reliable short- to medium-term prediction of the tender price index (TPI) is crucial to construction stakeholders, and this has stimulated the interest of the research community to seek a more analytical method for TPI forecast. The purpose of this study is to establish an econometric model for accurately predicting the tender price movements based on a group of associated financial and macroeconomic variables. Applying Johansen's method for multivariate cointegration analysis, the tender price was found to be cointegrated with the gross domestic product, construction output and building cost. A vector error correction (VEC) model imposing the cointegration

restriction was then developed for the purpose of forecasting. The model was verified against various diagnostic statistical criteria and compared with the Box-Jenkins and regression models. With a mean absolute percentage error for a three-year ahead forecast at 2.9% level, the developed VEC model outperforms the Box-Jenkins and regression models, and is proven to be efficient and reliable in forecasting the short- to medium-term tender price movements. The model can assist estimators to predict the TPI pattern in advance, and it can also help the public sector in planning for the construction workload to improve the stability of the construction market. Although the VEC model developed focuses on the Hong Kong construction market, the econometric technique can be applied to modelling other economic variables.

Keywords:

Cost estimate | econometric modelling | tender price index | vector error correction model | forecast

Related Research Data

MACRO MODELS OF UK CONSTRUCTION CONTRACT PRICES
Source: Civil Engineering Systems
Escalation management: Forecasting the effects of inflation on building projects
Source: Construction Management and Economics
An integrated regression analysis and time series model for construction tender price index forecasting
Source: Construction Management and Economics
An economic modelling approach for public sector construction workload planning
Source: Construction Management and Economics
Efficient tests for normality, homoscedasticity and serial independence of regression residuals
Source: Economics Letters
A comparative analysis of three macro price forecasting models
Source: Construction Management and Economics
Spon’s Construction Cost and Price Indices Handbook

Related research

People also read | Recommended articles | Cited by 53

An integrated regression analysis and time series model for construction tender price index forecasting >

S. Thomas Ng et al.
Construction Management and Economics
Published online: 13 May 2010

Prediction of tender price index directional changes >

S. Thomas Ng et al.
Construction Management and Economics
Published online: 21 Oct 2010

Information for

Authors

R&D professionals

Editors

Librarians

Societies

Open access

Overview

Open journals

Open Select

Dove Medical Press

F1000Research

Opportunities

Reprints and e-prints

Advertising solutions

Accelerated publication

Corporate access solutions

Help and information

Help and contact

Newsroom

All journals

Books

Keep up to date

Register to receive personalised research and resources by email

Sign me up

Copyright © 2026 Informa UK Limited Privacy policy

Cookies Terms & conditions Accessibility

Registered in England & Wales No. 01072954
5 Howick Place | London | SW1P 1WG

Taylor & Francis by informa