SUMMARY

Modelling of real estate market cycles is an area that attracts much attention in the real estate literature. This may be attributable to the pervasive and significant impact of real estate market cycles on real estate risks, returns and investment values. This study has been undertaken to examine the cyclical price fluctuations in the Singapore private residential property market and to identify the forces that drive the fluctuations in this market, using three econometric methodologies.

This study begins with an investigation into the stochastic structure of the private residential property price index (RPPI) series using the techniques of ARIMA modelling. The resultant model using the ARIMA(1,1,0) process suggests that the RPPI series is composed of a stationary cyclical component with zero mean and a non-stationary stochastic growth component. In other words, private residential property prices exhibit statistically significant cyclical fluctuations over a non-stationary trend over the past 25 years. This provides the basis for further analysis of the cyclical characteristics of private residential property prices.

Spectral and turning point analyses were used to examine the cycle length and other cyclical characteristics of private residential property prices. Cross-spectral and cross-correlation analyses were also carried out to look into the cyclical relationships between private residential property prices and several key macroeconomic and property variables.
The techniques of spectral and cross-spectral analyses have proven useful in revealing approximate cycle lengths in non-periodic series and the cyclical relationship between two variables.

To explore the dynamics of private residential price fluctuations, cointegration and error correction (CI-EC) modelling was applied. The results of the Johansen cointegration test show that there is sufficient evidence to establish a long-term equilibrium contemporaneous relationship between private residential property prices, gross domestic product, prime lending rates, and private housing starts. Based on the results of cointegration analysis, the estimation and test results of the error correction model (ECM) suggest that gross domestic product, prime lending rates, private housing starts and the previous changes in private residential property prices significantly influence private residential property price changes. Another key finding is that the error correction mechanism plays an important adjustment role in the fluctuations of private residential property prices to bring the deviations in prices return to the long-run equilibrium path.