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Abstract
In international finance, predicting and monitoring interest rates is primarily based on US operations – the financial markets predict the Federal Reserve's interest rate strategy, by monitoring indicators such as the US price indices, growth in the manufacturing industries, unemployment rate, growth in the economy, etc. In addition to Taiwan domestic factors such as the consumer price index, factory orders, international trade, and other economic conditions, Taiwan's central bank also looks at the current and recent trends of US interest rates when considering its interest rate strategy. Therefore, from the perspective of experts, study of Taiwan interest rate movements also has an international component.
The main objectives of this research paper are:
(1)To analyze the relationship of the overall economic indices to interest rates. (2)To determine, through unit root tests, whether interest rate fluctuation and overall economic indices are stationary. (3)To use GARCH model for analyzing the influence of the overall economic indices on interest rates fluctuations. (4)To find the relevant variables and analyze their sensitivity to the interest rate market, and to provide suggestions for predicting future interest rates.
The main goal of this study is to monitor Taiwan's short term interest rate fluctuations. The dataset was taken from the Bloomberg database, spanning from April 2004 to December 2006 for a total of 81 sample data points. This study uses 10 Taiwan economic indicators and 15 US economic indictors for predicting the month-end 30-day, 90-day, and 180-day commercial paper rates. When using the Taiwan economic indicators as the independent variables, for the 30-day interest rate fluctuation, the result reveals that 5 of the Taiwan economic indicators in GARCH (1,3) model provids the best performance. For the 90 day and 180 day interest rate fluctuations, 3 of the economic indicators used in GARCH (1,1) provided the best performance. When using the US economic indicators as the independent variables to predict US interest rate fluctuations, 2 economic indicators for the 30 day and 4 economic indicators for the 90 day and 180 day, respectively, used in the GARCH (1,1) model provided the best results. Within these economic indicators, the gold spot price and the US trade balance indicators met the 10% critical value in all three interest rates terms. Lastly, using US interest rate fluctuations and Taiwan economic indicators as the independent

variables, 3 economic indictors using GARCH (1,1) provids the best results. Of these 3, the Taiwan stock index and MSCI index meet the 10% critical value, and nearly match the actual directions of the interest rate fluctuations. Accordingly, including US interest rate fluctuations may provide the best model. Finally, when using Taiwan interest fluctuations rate as the dependent variables in the GARCH (1,1) model, the prediction of the interest rate fluctuation exactly match the actual one.
Advisory Committee Hung-Hsi Huang - advisor

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