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Model free evaluation of intraday periodicities of exchange rate return volatility

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Currency trading at the foreign exchange (hereinafter referred as Forex) market is now becoming more popular over the globe than trading at equity markets. Countries will have the economic benefit when engaging in international transactions by having bought appreciating currencies at the lowest prices. It would be beneficial for market participants to be well-informed on the volatility condition of exchange rates since it is considered as an important factor when making trading decisions.

Forex market executes its trading operations over the week starting from 22:00 Greenwich Mean Time (GMT) on Sunday to 22:00 GMT on Friday, while a trading day consists of four major trading sessions namely, Sydney, Tokyo, London and New York. This study investigates the discrepancies in intraday periodicities of EUR/USD returns during different trading days of the week. The Brown-Forsythe test was used to test disparities in volatility between different time lags across different trading days of the week.

The test revealed that the volatility of EUR/USD return exhibits more or less a similar behavior from Monday to Friday while a slight increase is seen from opening of the Tokyo session through the London session till opening of the New York session. During the New York session which is the last session of the day, volatility in different trading hours in any trading day of the week seems to continuously decrease. The highest volatility of the EUR/USD return was observed during the overlap time of the London and the New York sessions irrespective of the trading day. The lowest volatility was observed during the overlap time of the Sydney and Tokyo session in all the days except Monday where the lowest volatility was exhibited during the latter hours of the New York session.

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