Abstract

An Exchange rate is an economic term that plays a dynamic role for the developing countries. The exchange rate is referred to as the relative measurement that is utilized to strengthen the developing countries' economies. Hence, the exchange rate is the rate that provides the relative power of domestic currency concerning international currencies. Moreover, the exchange rate highly affects the economy as trade, inflation, remittances rely on empowering the domestic currency. However, organizations as well as individuals that are connected with the above factors can take advantage of the prediction of the stability of the currency. The exchange rate is an important factor that influences decisions taken by the participants of the foreign exchange market, namely investors, importers, exporters, bankers, financial institutions. Therefore, the prediction of exchange rate comprises of great value for the developing countries. One of the best ways of art as well as science to predict (exchange rate) upcoming events is the forecasting mechanism. Forecasting provides a path to predict what will occur in the future, which makes forecasting important for the forecaster. The heart reason for forecasting is the prediction of virtuous assessment, while it is required for competent work and producing operations. The main assumption of the forecasting mechanism is that the outcomes will provide authentic and strong evidence of upcoming events through random walks. Useful planning for the short as well as the long run, most of the time depends highly on the forecasting mechanism. Therefore, business investment never tolerates ignoring the mechanism of the forecast. "A forecast is the only estimate of demand until actual demand becomes known". As the current government uses the flexible exchange rate regime, therefore, a lot of fluctuations are found in the series used in this article. While these fluctuations are inherently noisy, non-stationary and deterministically chaotic. Hence, it is not an easy task to generate a quality forecast. To model and forecast the daily exchange rate of Pakistan with four major currencies are the Chinese Yuan, Euro Pound, Japanese Yen, and US Dollar. The set of observations for Pakistan Exchange Rate with these four powerful currencies is taken from the authentic source "State Bank of Pakistan". This study conducts the forecasting through the application of time series analysis. The data set comprises 1215 observations over the time period of 1^{st} January 2018 to 27^{th} April 2021. In the financial framework, the series comprises violence of stationarity. Therefore, to fulfill this basic xiv

assumption of time series analysis difference transformation is conducted. This transformation enforces the application of the ARIMA model. Further, the mean model estimated equation attested for the volatility effect and reveals the presence of conditional heteroscedasticity. Hence, to capture this conditional heteroscedasticity ARCH/GARCH time series techniques are utilized. However, the conditional hetroscedasticity is again checked and provided outcome with the no volatility effect. Hence, the ARCH model is used for the forecast of the exchange rate. It was concluded through the prediction from 15^{th} April 2021 to 31^{st} August 2021 through the ARCH modeling provides a better outcome for Pakistan exchange rate with Chinese Yuan than other series of currencies. Moreover, forecasting performance also supports ARCH modeling for the Chinese Yuan. While, all the series provide good predictions as its forecast observation has minimum difference with the actual values. Countries all around the world devalue their currencies to service their sovereign debt obligations, which may create pressure on Pakistan shortly