Eurasian Research Journal

RESEARCH ARTICLE

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ASYMMETRIC GARCH-TYPE AND HALF-LIFE VOLATILITY MODELLING OF USD/KZT EXCHANGE RATE RETURNS

Year 2020, Volume: 2 Issue: 2, 7 - 18, 15.07.2020

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Abstract

Empirical studies have shown that a large number of financial assets returns exhibit fat tails (leptokurtosis) and are often characterized by volatility clustering and asymmetry. This paper considers the ability of the asymmetric GARCHtype models to capture the stylized features of volatility in USD/KZT exchange rate returns. Therefore, the half-life parameter of the USD/KZT returns series were calculated for three sub-periods. The results revealed that the half-life was 6 days, 16 days and 12 days for 1st sub-period, 2nd sub-period and 3rd sub-period respectively. According to the results, in the presence of asymmetric responses to innovations in the Kazakhstan foreign exchange market, the EGARCH (1.1)-GED model which accommodates the kurtosis of financial time series is preferred. Also, these results show that the USD/KZT exchange rate returns have strong mean reversion and short half-life.

Keywords

EGARCH, GJRGARCH, APGARCH, USD/KZT exchange rate, Half-life volatility

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Publication Date	July 15, 2020
Published in Issue	Year 2020 Volume: 2 Issue: 2

Cite

APA	Ural, M., & Demırelı, E. (2020). ASYMMETRIC GARCH-TYPE AND HALF-LIFE VOLATILITY MODELLING OF USD/KZT EXCHANGE RATE RETURNS. Eurasian Research Journal, 2(2), 7-18.