Eurasian Research Journal

RESEARCH ARTICLE

EN

PDF BibTex RIS Cite

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

Mert Ural * Erhan Demırelı

https://izlik.org/JA26TR38KC

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

References

Abdalla, Suliman Z.S. (2012). “Modelling Exchange Rate Volatility Using GARCH Models: Empirical Evidence from Arab Countries”. International Journal of Economics and Finance 4(3): 216-229.

Ahmed, Rizwan R., Jolita Vveinhardt, Dalia Streimikiene and Zahid A. Channar (2018). “Mean Reversion in Intern ational Markets: Evidence from G.A.R.C.H. and Half-Life Volatility Models”. Economic Research-Ekonomska Istra zivanja 31(1): 1198-1217.

Baltagi, Badi H. (2000). Econometrics, Fourth Edition. Springer Press. USA. Bollerslev, Tim (1986). “Generalized Au toregressive Conditional Heteroscedasticity”. Journal of Econometrics 31(3): 307-327.

Bollerslev, Tim (1987). “A Conditionally Heteroskedastic Time Series Model for Speculative Prices and Rates of R eturn”. Review of Economics and Statistics 69(3): 542-547.

Box, G.E.P. and David R. Cox (1964). “An Analysis of Transformation”. Journal of the Royal Statistical Society 26 (2): 211-252.

Brooks, Chris (2002). Introductory Econometrics for Finance. Cambridge University Press. UK.

Chatfield, Chris (2003). The Analysis of Time Series: An Introduction, Sixth Edition. Chapman and Hall/CRC Publ ishing. USA.

Ding, Zhuanxin, Clive W.J. Granger and Robert F. Engle (1993). “A Long Memory Property of Stock Market Return s and a New Model”. Journal of Empirical Finance 1(1): 83-106.

Engle, Robert F. and Andrew J. Patton (2001). “What Good is a Volatility Model”. Quantitative Finance 1(2): 237–245.

Engle, Robert F. (1982). “Autoregressive Conditional Heteroscedasticity with Estimates of the Variance of Unite d Kingdom Inflation”. Econometrica 50(4): 987–1007.

Show All References

There are **25** citations in total.

Details

Primary Language	English
Journal Section	Research Article

Authors	**Mert Ural** * ← This is me DOKUZ EYLUL UNIVERSITY 0000-0003-3252-846X Türkiye **Erhan Demırelı** ← This is me DOKUZ EYLUL UNIVERSITY Türkiye
Publication Date	July 15, 2020
IZ	https://izlik.org/JA26TR38KC
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. https://izlik.org/JA26TR38KC