

Volatility modeling for IDR exchange rate through APARCH model with student- t distribution **FREE**

Didit Budi Nugroho; Bambang Susanto

[+ Author & Article Information](#)

AIP Conf. Proc. 1868, 040005 (2017)

<https://doi.org/10.1063/1.4995120>

The aim of this study is to empirically investigate the performance of APARCH(1,1) volatility model with the Student- t error distribution on five foreign currency selling rates to Indonesian rupiah (IDR), including the Swiss franc (CHF), the Euro (EUR), the British pound (GBP), Japanese yen (JPY), and the US dollar (USD). Six years daily closing rates over the period of January 2010 to December 2016 for a total number of 1722 observations have analysed. The Bayesian inference using the efficient independence chain Metropolis-Hastings and adaptive random walk Metropolis methods in the Markov chain Monte Carlo (MCMC) scheme has been applied to estimate the parameters of model. According to the DIC criterion, this study has found that the APARCH(1,1) model under Student- t

We and our 1 IAB TCF partners store and access information on your device for the following purposes: store and/or access information on a device, advertising and content measurement, audience research, and services development, personalised advertising, and personalised content.

Personal data may be processed to do the following: use precise geolocation data and actively scan device characteristics for identification.

Our third party IAB TCF partners may store and access information on your device such as IP address and device characteristics. Our IAB TCF Partners may process this personal data on the basis of legitimate interest, or with your consent. You may change or withdraw your preferences for this website at any time by clicking on the cookie icon or link; however, as a consequence, you may not see relevant ads or personalized content. You may change your settings at any time or accept the default settings. You may close this banner to continue with only essential cookies. [Privacy Policy](#)

[Storage Preferences](#)

[Third Parties](#)

Storage

Targeted Advertising

Personalization

Analytics

[Google Scholar](#) [Crossref](#)

3. T. Bollerslev, *Review of Economics and Statistics*, 69, 542–547 (1987). <https://doi.org/10.2307/1925546>

[Google Scholar](#) [Crossref](#)

4. D. B. Nelson, *Econometrica*, 59, 347–370 (1991).

<https://doi.org/10.2307/2938260>

[Google Scholar](#) [Crossref](#)

5. L. R. Glosten, R. Jagannathan, and D. E. Runkle, *The Journal of Finance*, 48, 1779–1801 (1993).

<https://doi.org/10.1111/j.1540-6261.1993.tb05128.x>

[Google Scholar](#) [Crossref](#)

6. Z. Ding, C. W. Granger, and R. F. Engle, *Journal of Empirical Finance*, 1 (1), 83–106 (1993).

[https://doi.org/10.1016/0927-5398\(93\)90006-D](https://doi.org/10.1016/0927-5398(93)90006-D)

[Google Scholar](#) [Crossref](#)

7. J. - M. Zakoian, *Journal of Economic Dynamics and Control*, 15, 931–955 (1994). [https://doi.org/10.1016/0165-1889\(94\)90039-6](https://doi.org/10.1016/0165-1889(94)90039-6)

[Google Scholar](#) [Crossref](#)

8. Sumiyana, *Gajah Mada Int. Journal of Business*, 9 (3), 399–443 (2007).

[Google Scholar](#) [Crossref](#)

We and our 1 IAB TCF partners store and access information on your device for the following purposes: store and/or access information on a device, advertising and content measurement, audience research, and services development, personalised advertising, and personalised content.

Personal data may be processed to do the following: use precise geolocation data and actively scan device characteristics for identification.

Our third party IAB TCF partners may store and access information on your device such as IP address and device characteristics. Our IAB TCF Partners may process this personal data on the basis of legitimate interest, or with your consent. You may change or withdraw your preferences for this website at any time by clicking on the cookie icon or link; however, as a consequence, you may not see relevant ads or personalized content. You may change your settings at any time or accept the default settings. You may close this banner to continue with only essential cookies. [Privacy Policy](#)

[Storage Preferences](#)

[Third Parties](#)

Storage

Targeted Advertising

Personalization

Analytics

15. R. S. Tsay, *Analysis of Financial Time Series*, Second Edition, (John Wiley & Sons: New Jersey, 2005) p. 81.

[Google Scholar](#) [Crossref](#)

16. S. Taylor, *Modelling Financial Time Series*, (John Wiley & Sons: New York, 1986).

[Google Scholar](#)

17. S. Kim, N. Shepard, and S. Chib, *Review of Economic Studies*, 65, 361–393 (1998). <https://doi.org/10.1111/1467-937X.00050>

[Google Scholar](#) [Crossref](#)

18. I. - Y. Chuang, J. - R. Lu, P. - H. Lee, *Applied financial Econometrics*, 17 (13), 1051–1060 (2007).

<https://doi.org/10.1080/09603100600771000>

[Google Scholar](#) [Crossref](#)

19. L. Tierney, *Annals of Statistics*, 22 (4), 1701–1762 (1994).

<https://doi.org/10.1214/aos/1176325750>

[Google Scholar](#) [Crossref](#)

20. J. Albert, *Bayesian Computation with R*, Second Edition, (Springer: New York, 2009) p. 94.

[Google Scholar](#) [Crossref](#)

21. M. H. Chen and Q. M. Shao, *Journal of Computational and Graphical Statistics*, 9, 60–62 (1999).

We and our 1 IAB TCF partners store and access information on your device for the following purposes: store and/or access information on a device, advertising and content measurement, audience research, and services development, personalised advertising, and personalised content.

Personal data may be processed to do the following: use precise geolocation data and actively scan device characteristics for identification.

Our third party IAB TCF partners may store and access information on your device such as IP address and device characteristics. Our IAB TCF Partners may process this personal data on the basis of legitimate interest, or with your consent. You may change or withdraw your preferences for this website at any time by clicking on the cookie icon or link; however, as a consequence, you may not see relevant ads or personalized content. You may change your settings at any time or accept the default settings. You may close this banner to continue with only essential cookies. [Privacy Policy](#)

[Storage Preferences](#)

[Third Parties](#)

Storage

Targeted Advertising

Personalization

Analytics

27. D. B. Nugroho and T. Morimoto, *Journal of Applied Statistics*, 43 (10), 1906–1927 (2016).

<https://doi.org/10.1080/02664763.2015.1125862>

[Google Scholar](#) [Crossref](#)

This content is only available via PDF.

© 2017 Author(s).

We and our 1 IAB TCF partners store and access information on your device for the following purposes: store and/or access information on a device, advertising and content measurement, audience research, and services development, personalised advertising, and personalised content.

Personal data may be processed to do the following: use precise geolocation data and actively scan device characteristics for identification.

Our third party IAB TCF partners may store and access information on your device such as IP address and device characteristics. Our IAB TCF Partners may process this personal data on the basis of legitimate interest, or with your consent. You may change or withdraw your preferences for this website at any time by clicking on the cookie icon or link; however, as a consequence, you may not see relevant ads or personalized content. You may change your settings at any time or accept the default settings. You may close this banner to continue with only essential cookies. [Privacy Policy](#)

[Storage Preferences](#)

[Third Parties](#)

Storage

Targeted Advertising

Personalization

Analytics