

Search



Home > International Economics and Economic Policy > Article

# Forecasting exchange rate volatility: GARCH models versus implied volatility forecasts

Original Paper | Published: 09 May 2014

Volume 12, pages 127–142, (2015) Cite this article



**International Economics and** 

# Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 96 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

- > Store and/or access information on a device
- Personalised advertising and content, advertising and content measurement, audience research and services development

Accept all cookies

Reject optional cookies



#### Access this article

#### Log in via an institution →

#### Subscribe and save

Springer+ Basic

€32.70 /Month

- Get 10 units per month
- Download Article/Chapter or eBook
- 1 Unit = 1 Article or 1 Chapter
- Cancel anytime

#### Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 96 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

**Accept all cookies** 

Reject optional cookies

13 March 2018 Article | 16 April 2018 Chapter | © 2021

#### **Notes**

- 1. A symmetric model means that when a shock occurs, we will have a symmetric response of volatility to both positive and negative shocks. Asymmetric models on the other hand, allow for an asymmetric response with empirical results show that negative shocks will lead to higher volatility than a positive shock.
- 2. Over fitting happens when the statistical model describes a random error or noise instead of the underlying relationship, causing biasedness in parameter estimates.

## Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 96 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

**Accept all cookies** 

Reject optional cookies

- 8. Bollerslev et al. (2001) argue that this type of volatility is an unbiased and very efficient estimator of return volatility.
- 9. It should be noted that the parameters  $(\alpha + \beta)$  were less but close to unity, suggesting that the shocks are highly persistent and die out only gradually.
- 10. It should be noted that the parameters are "forced" to be positive since we are measuring the natural log of returns. In theory, the "EGARCH benchmark model" has an AR(1) mean equation, but in our case the parameters proved to be more significant using a constant mean equation.

# References

## Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 96 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

**Accept all cookies** 

Reject optional cookies

Balaban E (2004) Comparative forecasting performance of symmetric and asymmetric conditional volatility models of an exchange rate. Econ Lett 83(1):99-105

**Article Google Scholar** 

Bildirici M, Ersin O (2009) Improving forecasts of GARCH family models with the artificial neural networks: an application to the daily returns in Istanbul stock exchange. Expert Syst Appl 36(4):7355–7362

**Article Google Scholar** 

Bollerslev T (1986) Generalized autoregressive conditional heteroscedasticity. J

Fcon 31(3)-307\_327

#### Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 96 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

**Accept all cookies** 

Reject optional cookies

Chen X, Ghysels E, Wang F (2011) HYBRID GARCH models and intra-daily return periodicity. J Time Ser Econ 3(1):1–28

**Article Google Scholar** 

Donaldson R, Kamstra M (2005) Volatility forecasts, trading volume and the ARCH vs option implied volatility tradeoff. J Financ Res 27(4):519-538

**Article Google Scholar** 

Dunis C, Laws J, Chauvin S (2003) FX volatility forecasts and the informational data for volatility. Eur J Financ 17(1):117–160

## Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 96 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

**Accept all cookies** 

Reject optional cookies

Higgins M, Bera A (1992) A class of nonlinear ARCH models. Int Econ Rev 33(1):137–158

**Article Google Scholar** 

Neely C (2009) Forecasting foreign exchange volatility: why is implied volatility biased and inefficient? and does it matter? J Int Financ Mark Inst Money 19(1):188–205

Article Google Scholar

Nelson (1991) 'Conditional heteroskedasticity in asset returns: a new approach'. Econometrica 59(2):347–370

## Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 96 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

**Accept all cookies** 

Reject optional cookies

Zakoïan J (1994) Threshold heteroskedastic models. J Econ Dyn Control 18(5):931-955

**Article Google Scholar** 

# **Acknowledgments**

We are extremely grateful for comments and suggestions from participants at the annual European Economics and Finance Society conference 2013 in Berlin and the comments of the two anonymous referees.

## **Author information**

## Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 96 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

**Accept all cookies** 

Reject optional cookies

201

https://doi.org/10.1007/s10368-014-0289-4

## Keywords

**Exchange Rate** 

Volatility modelling

#### **JEL classification**

E44

**G12** 

#### Search

## Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 96 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

Accept all cookies

Reject optional cookies

## Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 96 **partners**, also use optional cookies and similar technologies for advertising, personalisation of content, usage analysis, and social media.

By accepting optional cookies, you consent to allowing us and our partners to store and access personal data on your device, such as browsing behaviour and unique identifiers. Some third parties are outside of the European Economic Area, with varying standards of data protection. See our **privacy policy** for more information on the use of your personal data. Your consent choices apply to springer.com and applicable subdomains.

You can find further information, and change your preferences via 'Manage preferences'. You can also change your preferences or withdraw consent at any time via 'Your privacy choices', found in the footer of every page.

We use cookies and similar technologies for the following purposes:

Store and/or access information on a device

Personalised advertising and content, advertising and content measurement, audience research and services development

**Accept all cookies** 

Reject optional cookies