

[Home](#) > [Empirical Economics](#) > [Article](#)

# Uncertainty and implied variance bounds in long-memory models of the interest rate term structure

| Published: September 1991

| Volume 16, pages 287–312, (1991) [Cite this article](#)



[Empirical Economics](#)

## Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **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](#)

[Manage preferences](#)

## Access this article

Log in via an institution →

## Subscribe and save

✓ Springer+

from €37.37 /Month

- Starting from 10 chapters or articles per month
- Access and download chapters and articles from more than 300k books and 2,500 journals
- Cancel anytime

View plans →

Buy Now

## Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **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

Manage preferences

## Explore related subjects

Discover the latest articles, books and news in related subjects, suggested using machine learning.

[Econometrics](#)[Financial Econometrics](#)[Financial Economics](#)[Non-parametric Inference](#)[Quantitative Finance](#)[Statistical Finance](#)

## References

Bloomfield P (1976) Fourier Analysis of Time Series: An Introduction, John Wiley & Sons, New York

[Google Scholar](#)

## Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **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](#)

[Manage preferences](#)

about the term structure of interest rates. Journal of Finance 36:769-799

[Google Scholar](#)

Diebold FX (1989) RAndom walks versus fractional integration: Power comparisons of scalar and joint tests of the variance-time function. In: Ray B (ed) Advances in Econometrics and Modeling, Kluwer Academic Publishers, Dordrecht

[Google Scholar](#)

Diebold FX, Rudebusch GD (1989) Long memory and persistence in aggregate output. Journal of Monetary Economics 24:189-209

[Google Scholar](#)

## Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **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](#)

[Manage preferences](#)

Flavin MA (1983) Excess volatility in the financial markets: A reassessment of the empirical evidence. Journal of Political Economy 91:929–956

[Google Scholar](#)

Geweke J, Porter-Hudak S (1983) The estimation and application of long memory time series models. Journal of Time Series Analysis 4:221–238

[Google Scholar](#)

Granger CWJ (1966) The typical spectral shape of an economic variable. Econometrica 34:150–161

[Google Scholar](#)

## Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **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](#)

[Manage preferences](#)

Greene MT, Fielitz BD (1977) Long-term dependence in common stock returns. Journal of Financial Economics 4:339–349

[Google Scholar](#)

Grossman SJ, Shiller RJ (1981) The determinants of the variability of stock market prices. American Economic Review 71:222–227

[Google Scholar](#)

Haubrich JG, Lo AW (1989) The sources and nature of long-term memory in the business cycle. Unpublished manuscript, University of Pennsylvania, the Wharton School

## Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **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](#)

[Manage preferences](#)

samples: A Monte Carlo investigation. Unpublished manuscript, NBER

Mandelbrot BB (1972) Statistical methodology for nonperiodic cycles: from the covariance tor/s analysis. Annals of Economic and Social Measurement 1:259–290

[Google Scholar](#)

Mankiw NG, Romer D, Shapiro MD (1985) An unbiased reexamination of stock market volatility. Journal of Finance 40:677–687

[Google Scholar](#)

Mattey J, Meese R (1986) Empirical assessment of present value relations. Econometric Reviews 5:171–234

## Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **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](#)

[Manage preferences](#)

Shea GS (1984) Pitfalls in smoothing interest rate term structure data: Equilibrium models and spline approximations. Journal of Financial and Quantitative Analysis 19:253-269

[Google Scholar](#)

Shea GS (1987) Long-memory models of interest rates: Estimation, forecasting, and inference for variance bounds on the interest rate term structure. Unpublished manuscript, The Pennsylvania State University, Dept of Finance

Shea GS (1989a) Qualms about the linearized expectations hypothesis and variance-bounds studies of the interest rate term structure. Unpublished manuscript, The Pennsylvania State University, Dept of Finance

## Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **[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](#)

[Manage preferences](#)



Sowell FB (1988) Maximum likelihood estimation of fractionally integrated time series models. Unpublished manuscript, Carnegie-Mellon University, GSIA

Yajima Y (1985) On estimation of long-memory time series models. Australian Journal of Statistics 27:303–320

[Google Scholar](#)

## Author information

### Authors and Affiliations

**The Pennsylvania State University, 609 Business Administration Building, 16802, University Park, Pennsylvania**

### Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **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](#)

[Manage preferences](#)

## Cite this article

Shea, G.S. Uncertainty and implied variance bounds in long-memory models of the interest rate term structure. *Empirical Economics* **16**, 287–312 (1991). <https://doi.org/10.1007/BF01206277>

Received

15 November 1988

Revised

15 November 1989

Issue Date

September 1991

DOI

<https://doi.org/10.1007/BF01206277>

## Keywords

[Standard Error](#)

[Linear Model](#)

[Interest Rate](#)

[Economic Theory](#)

[Fractional Order](#)

## Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 **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](https://www.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](#)

[Manage preferences](#)

## Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 93 [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](#)

[Manage preferences](#)