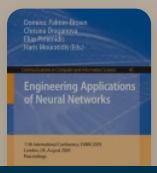
Modeling and Forecasting CAT and HDD Indices for Weather Derivative Pricing

Conference paper

pp 210–222 | Cite this conference paper



Engineering Applications of Neural Networks

cities all traded in Chicago Mercantile Exchange. Our results suggest that the proposed method outperforms alternative pricing methods proposed in prior studies in most cases. Our findings suggest that wavelet networks can model the temperature process very well and consequently they constitute a very accurate and efficient tool for weather derivatives pricing. Finally, we provide the pricing equations for temperature futures on Heating Degree Day index.

Softcover Book

EUR 106.99
Price includes VAT (Poland)

- Compact, lightweight edition
- Dispatched in 3 to 5 business days
- Free shipping worldwide - see info

Buy Softcover Book →

Tax calculation will be finalised at checkout

Purchases are for personal use only

Institutional subscriptions →

Econometrics | Financial Econometrics | Mathematical Finance | Meteorology | Quantitative Finance | Statistical Finance

References

1. Challis, S.: Bright Forecast for Profits, Reactions. June edn. (1999)

Google Scholar

2. Hanley, M.: Hedging the Force of Nature. Risk Professional 1, 21–25 (1999)

Google Scholar

7. Alaton, P., Djehince, B., Stillberg, D.: On Modelling and Pricing Weather Derivatives. Applied Mathematical Finance 9, 1–20 (2000)

Article Google Scholar

8. Zhang, Q., Benveniste, A.: Wavelet Networks. IEEE Trans. Neural Networks 3, 889–898 (1992)

Article Google Scholar

9. Benth, F.E., Saltyte-Benth, J.: The volatility of temperature and pricing of weather derivatives. Quantitative Finance 7, 553–561 (2007)

Article MathSciNet MATH Google Scholar

Networks Framework. In: Iliadis, L., Vlahavas, I., Bramer, M. (eds.) Artificial Intelligence Applications and Innovations III. IFIP, vol. 296, pp. 267–277. Springer, New York (2009)

Chapter Google Scholar

15. Cao, M., Wei, J.: Pricing the weather. In: Risk Weather Risk Special Report, Energy And Power Risk Management, pp. 67–70 (2000)

Google Scholar

16. Davis, M.: Pricing weather derivatives by marginal value. Quantitative Finance 1, 1–4 (2001)

MathSciNet Google Scholar

21. Benth, F.E., Saltyte-Benth, J.: Stochastic Modelling of Temperature Variations With a View Towards Weather Derivatives. Applied Mathematical Finance 12, 53–85 (2005)

Article MATH Google Scholar

22. Oussar, Y., Rivals, I., Presonnaz, L., Dreyfus, G.: Trainning Wavelet Networks for Nonlinear Dynamic Input Output Modelling. Neurocomputing 20, 173–188 (1998)

Article MATH Google Scholar

23. Zhang, Q.: Using Wavelet Network in Nonparametric Estimation. IEEE Trans. Neural Networks 8, 227–236 (1997)

739. Springer, Heidelberg (2005)

Chapter Google Scholar

28. Benth, F.E., Saltyte-Benth, J., Koekebakker, S.: Putting a price on temperature. Scandinavian Journal of Statistics 34, 746–767 (2007)

MathSciNet MATH Google Scholar

Author information

Authors and Affiliations

Department of Accounting and Finance, University of Macedonia of Economics and Social Studies, 156 Egnatia St., P.O. 54006, Thessaloniki

Copyright information

About this paper

Cite this paper

Zapranis, A., Alexandridis, A. (2009). Modeling and Forecasting CAT and HDD Indices for Weather Derivative Pricing. In: Palmer-Brown, D., Draganova, C., Pimenidis, E., Mouratidis, H. (eds) Engineering Applications of Neural Networks. EANN 2009. Communications in Computer and Information Science, vol 43. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-03969-0_20

Search by keyword or author

Navigation

Find a journal

Publish with us

Track your research

Your privacy, your choice

We use essential cookies to make sure the site can function. We, and our 92 **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