

Emerging Trends in Energy Economics

Periklis Gogas *  and Theophilos Papadimitriou 

Department of Economics, Democritus University of Thrace, 69100 Komotini, Greece; papadimi@econ.duth.gr

* Correspondence: pgkogkas@econ.duth.gr

In the intersection between economics and engineering, energy economics has been an active research topic for more than 150 years. From the 19th century, the problem of creating, processing, storing and transporting energy based on exhaustible resources (coal initially, oil, natural gas and electricity later) was well defined. It was during the major international oil crisis of 1973, however, that the national and international sociopolitical factors integrated with energy were identified, revealed, studied extensively and were finally incorporated into the scientific debate on energy economics. The increased interest in this multidisciplinary topic manifested in the publication of specialized scientific journals that focus and deal with this significant and complex issue. Energy economics is a significant and broad segment of this line of research. Energy economics deals with the production, supply and demand of all forms of energy, the efficiency and optimization in the use of the relevant technology and know-how that pertains to the production, distribution and storage (when possible). It affects all aspects of real economic activity, both the supply side and the consumption. Moreover, energy economics include the study, analysis and forecasting of all forms of energy as a financial commodity. Investment, hedging and speculation are significant areas of research interest, as with all commodities. Energy as a financial commodity that is traded in organized exchanges and over-the-counter in private contracts is an interesting, rigorous and very dynamic strain of research. The reason for this attention is of course the significant changes that are materializing especially in industrialized countries, i.e., the European Union, the US, etc. These countries have started distancing themselves from and limiting their use of fossil fuels—especially coal and oil. There is a transition to less dependence on those types of energy and towards renewable forms of energy that are environmentally neutral. As a result, the research interest on energy is keen and the research work on this area is also facilitated for the scholars by the availability of large sets of energy data in very high frequencies. Thus, it provides a fertile ground for the application of both traditional and emerging methodologies.

When we proposed the topic of this Special Issue for *Energies*, we were targeting the innovation and the novelty in the area of energy economics with a special focus on production, distribution, storing, forecasting, financing, risk, taxation, trading, exchanges, networks, etc., in both spot and derivatives markets. We are very proud of the attention that our call for papers attracted from researchers in the field and of the resulting quality of the Special Issue that we composed from their innovative approaches.

In [1], Flouros et al. compile a panel of 171 economies and use it to study the effect of geopolitical risk on the transition to a “green” economy. Ioannidis et al. in [2] examine the recently introduced Target Model, its application in the wholesale electricity market of Greece and its impact on electricity prices. Chen and Rehman in [3] identify the critical periods in the trading of energy-related commodities employing an unsupervised Machine Learning framework. Balashova and Serletis in [4] uncover hidden linkages between the oil price uncertainty, the total factor productivity (TFP) growth, and the critical indicators of knowledge production and associated spillovers. Christopoulos et al. in [5] investigated the effect that the COVID-19 pandemic and the stock market volatility have on oil price volatility. Three papers apply various forecasting techniques in forecasting energy:



Citation: Gogas, P.; Papadimitriou, T. Emerging Trends in Energy Economics. *Energies* **2022**, *15*, 5212. <https://doi.org/10.3390/en15145212>

Received: 12 July 2022

Accepted: 18 July 2022

Published: 19 July 2022

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Gupta and Pierdzioch in [6] are forecasting the volatility of crude oil using the LASSO estimator, Hu et al. in [7] forecast the Short-Term Load using the Ensemble Empirical Mode Decomposition coupled with the Salp Swarm Algorithm, and Mouchtaris et al. in [8] forecast the Natural Gas Spot Prices using an arsenal of Machine Learning Methodologies. The Special Issue is concluded by two review papers: Menegaki in [9] summarizes and compares results of different studies in the energy-sustainable growth nexus for various groups of countries, and Oliveira and Moutinho in [10] perform a bibliographic analysis on the topics of renewable energy, economic growth and the economic development nexus.

We express our gratitude to all the researchers that trusted their valuable research papers to our Special Issue. We must also thank all the editorial people from MDPI and the *Energies* journal that supported us with this effort and made the editorship a pleasant and productive experience for us.

Funding: This research received no external funding.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Flouros, F.; Pistikou, V.; Plakandaras, V. Geopolitical Risk as a Determinant of Renewable Energy Investments. *Energies* **2022**, *15*, 1498. [\[CrossRef\]](#)
2. Ioannidis, F.; Kosmidou, K.; Andriosopoulos, K.; Everkiadi, A. Assessment of the Target Model Implementation in the Wholesale Electricity Market of Greece. *Energies* **2021**, *14*, 6397. [\[CrossRef\]](#)
3. Chen, J.M.; Rehman, M.U. A Pattern New in Every Moment: The Temporal Clustering of Markets for Crude Oil, Refined Fuels, and Other Commodities. *Energies* **2021**, *14*, 6099. [\[CrossRef\]](#)
4. Balashova, S.; Serletis, A. Oil Price Uncertainty, Globalization, and Total Factor Productivity: Evidence from the European Union. *Energies* **2021**, *14*, 3429. [\[CrossRef\]](#)
5. Christopoulos, A.G.; Kalantonis, P.; Katsampoxakis, I.; Vergos, K. COVID-19 and the Energy Price Volatility. *Energies* **2021**, *14*, 6496. [\[CrossRef\]](#)
6. Gupta, R.; Pierdzioch, C. Forecasting the Volatility of Crude Oil: The Role of Uncertainty and Spillovers. *Energies* **2021**, *14*, 4173. [\[CrossRef\]](#)
7. Hu, T.; Zhou, M.; Bian, K.; Lai, W.; Zhu, Z. Short-Term Load Probabilistic Forecasting Based on Improved Complete Ensemble Empirical Mode Decomposition with Adaptive Noise Reconstruction and Salp Swarm Algorithm. *Energies* **2022**, *15*, 147. [\[CrossRef\]](#)
8. Mouchtaris, D.; Sofianos, E.; Gogas, P.; Papadimitriou, T. Forecasting Natural Gas Spot Prices with Machine Learning. *Energies* **2021**, *14*, 5782. [\[CrossRef\]](#)
9. Menegaki, A.N. Towards a Global Energy-Sustainable Economy Nexus; Summing up Evidence from Recent Empirical Work. *Energies* **2021**, *14*, 5074. [\[CrossRef\]](#)
10. Oliveira, H.; Moutinho, V. Renewable Energy, Economic Growth and Economic Development Nexus: A Bibliometric Analysis. *Energies* **2021**, *14*, 4578. [\[CrossRef\]](#)