Introduction to the Special Issue on "Energy Market Transition, Financialization and Integration"

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INTRODUCTION

The international energy market has experienced remarkable shocks in the past few decades, leading to structural transformation of energy pricing mechanisms. New systems have emerged due to climate change, geopolitical conflicts, and the COVID-19 pandemic. Among all of the new features, three phenomena are especially worthy of investigation, namely, energy transition towards renewable energy, energy market financialization, and regional market integration. Together, these developments have challenged the traditional wisdom about how the energy market works, demanding new knowledge and understanding of the current system.

First, the transition to renewable energy is costly and at the same time risky. There are still heated debates across the world on how to make a smooth transition. Further development of emission trading platforms may contribute in the long-term to provide compatible incentives, but even the most well-established EU ETS remains in trouble. Second, financialization in the energy market has become a popular concept since the 2008 global financial crisis (Zhang and Ji, 2019). The international energy market clearly shows new dynamic patterns similar to those in the financial markets, including risk spillovers, excess volatility, and cross-market contagion. While these changes shape the fundamental rules in the international energy market, they also bring new challenges and opportunities to investors. Standard risk management models may need to be updated with more complex risk spillover patterns and cross-market co-movements. In addition, these changes can pose extra challenges to energy market transition, making this process even more unpredictable. Third, there are trends of market segmentation at the global level, but market integration at the regional level. In other words, due to anti-globalization in recent years, countries tend to work more closely at the regional level, leading to regional energy market integration. How this may affect global energy markets is a worthy research question for investigation.

To resolve these upfront issues in international energy markets, the Energy Journal, and the China Energy Finance Network (CEFN, www.cnefn.com) have jointly organized this special issue. Papers were selected from those presented at the fourth International Conference on Climate and Energy Finance (ICEF2021) at Xiamen University and solicited submissions from the IAEE membership. The following section briefly summarizes the main findings in this collection.

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2. SUMMARY OF THE CONTRIBUTIONS

The first paper in this collection is titled "News Media and Attention Spillover across Energy Markets: A Powerful Predictor of Crude Oil Futures Prices," by Oguzhan Cepni, Duc Khung Nguyen and Ahmet Sensoy. In this paper, the authors attempt to find new predictors in forecasting crude oil prices from the internet attention perspective. They propose two news-based investor attention indices using Bloomberg terminal's news sources and confirm the validity of their predictions. Due to the development of big data analytics, using textual based approaches to extract market information has become a useful technique for predicting financial market dynamics. This paper shows that similar approaches may be useful in understanding the dynamics of energy markets.

The second paper is "Variance Risk Premiums in Energy Markets: Ex-ante and Ex-post Perspectives" by Giacomo Morelli. Diverging from the general estimation of the variance risk premium, this paper introduces a novel ex-ante method to calculate the variance risk premium and quantify the exposure to variance-related risks. The author proves that the ex-ante variance risk premium can detect financial distress successfully when the financial market is unstable.

Qiang Ji, Ronald D. Ripple, Dayong Zhang, and Yuqian Zhao's work is the third paper in this collection. Their work, "Cryptocurrency Bubble on the Systemic Risk in Global Energy Companies," discusses a new topic regarding to what extent the cryptocurrency bubble affects systemic risk in the top 100 energy companies. Their results present strong evidence that the burst of the cryptocurrency bubble can significantly increase systemic risks in the energy sector. The research provides further evidence on cross-market risk spillovers between energy markets and other financial sectors, and thus has important implications for energy market financialization.

The fourth paper, "Oil Price Shocks and Bank Risk around the World" by Yi Jin, Pengxiang Zhai, and Zhaobo Zhu examines the relationship between oil price shocks and risks in the international banking sector. This study takes another new perspective on the implications of energy market financialization. The authors use a global sample from 39 countries and find that all three types of oil shocks have positive impacts on bank risk.

The last paper, "Network Topology of Dynamic Credit Default Swap Curves of Energy Firms and the Role of Oil Shocks," by Elie Bouri and Syed Jawad Hussain Shahzad also investigates the role of oil shocks. It employs a network topology to quantify the dynamic impacts of oil shocks on credit risk of energy firms. The results show oil demand shocks and oil supply shocks have heterogeneous impacts on interconnectedness across credit horizons.

Overall, the collection of papers provides new evidence on energy finance and contributes to this strand of literature with new techniques, new pricing factors, and also innovative perspectives with new evidence. We also strongly believe that the research progress of this special issue provides useful new insights and contributes to the enhancement of the analytical frameworks regarding the financialization of energy markets.

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