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## Editorial

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### Michael Tamvakis

Cass Business School,  
City University London,  
Northampton Square,  
London EC1V 0HB, UK  
Email: m.tamvakis@city.ac.uk

### Rita D'Ecclesia

MEMOTEF Department of Mathematical Methods for Finance,  
Economics and Trade Flows,  
Sapienza University of Rome,  
Roma, Italy  
Email: rita.decclesia@uniroma1.it

### Kostas Andriosopoulos\*

Research Centre for Energy Management,  
ESCP Europe Business School,  
London NW3 7BG, UK  
Email: kandriosopoulos@escpeurope.eu  
\*Corresponding author

**Biographical notes:** Michael Tamvakis trained as an economist at the Athens University of Economics and Business in Greece. He then joined the International Centre for Shipping, Trade and Finance at the (then) City University Business School; first as a student on its MSc programme, and then as a member of its academic staff. He received his PhD from City and is currently Professor of Commodity Economics and Finance at Cass and visiting professor at HEC (University of Geneva). He lectures in international commodity trade, commodity derivatives, energy economics and shipping economics, where he also focuses his research interests.

Rita D'Ecclesia holds a PhD in Corporate Finance and a BA(Hon.) in Statistics. She is Full Professor at Sapienza University of Rome and Visiting Professor at Birkbeck, University of London; Director of the PhD programme in International Economics and Finance (Doctoral School in Economics) at Sapienza University of Rome; Chair of the Euro Working Group for Commodities and Financial Modeling and Associate Editor of several journals. In addition she is the Director of the International Summer School on Risk Measurement and Control organised at Sapienza University of Rome. She teaches courses at both undergraduate and graduate level. Her most recent research topics are related to risk measurement in financial and commodity markets.

Kostas Andriosopoulos is an Assistant Professor in Finance and Energy Economics and Executive Director of the Research Centre for Energy Management at ESCP Europe Business School. He holds a PhD in Finance (Cass Business School, City University London). He also holds an MBA and MSc in Finance (Northeastern University, Boston, USA), and a bachelor's degree in Production Engineering and Management (Technical University of Crete, Greece). His current research interests include price modelling, financial engineering and the application of risk management techniques and innovative investment strategies in energy, shipping and agricultural commodities' markets, and international trade.

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Commodities have always been at the heart of world economic activity and recently have become a new asset class. Assets under management have grown from USD 10 billion in 2000 to USD 400 billion by 2010. It is also worth noting that we have had few commodity derivative failures in this period when financial derivatives have failed at unprecedented scale.

Energy prices, e.g., crude oil and coal, have witnessed a gigantic volatility over the last few years, under the combined effect of a greater public awareness of the exhaustible nature of fossil energy, the massive arrival of new players into commodities and the current looming depression worldwide. Global primary energy demand is expected to increase by more than one-half by 2030, with over 70% of that demand coming from developing countries. Fossil fuels, such as oil, coal and gas will continue to provide most of this energy. In the Western countries, the level of competition among the different producers in the market has increased; this should eventually lead to increased efficiency. Simultaneously, a number of uncertainty factors have appeared on the scene, including financial risks.

The current volume of this Special Issue of the *International Journal of Financial Engineering and Risk Management (IJFERM)* on Commodities Financial Risk Management is the first of a series of two volumes on the same eclectic collection of research into a number of different facets of commodities markets. Both volumes include high-quality papers on various aspects of commodities financial management including modelling, trading, hedging and arbitrage. In this special issue both theoretical and empirical research results are presented.

Energy as a primary economic driver attracts the most attention. Of the three major fossil fuels, which include natural gas and coal, petroleum is the most traded and liquid of these. Understanding crude oil and all the other fossil fuels dynamics is crucial for price modelling and risk management strategies.

Crude oil is the focus of the first paper by Scandroglio et al. who scrutinise the two most analysed crude oil futures markets: Brent and WTI. Their paper uses a semi-parametric methodology, which relies on selecting a highly flexible parametric distribution, as well as modelling the third and fourth moments as non-parametric functions of the price of oil. They highlight a practical application of their approach, the more accurate estimation of Value-at-Risk and Expected Shortfall measures when assessing market risks. An interesting conclusion of their paper is that they cast doubt on the common assumption that the oil price cannot be predicted. In contrast, their methodology demonstrates that probabilistic statements about the spot price of oil can be made, or as they phrase it 'somebody knows something'.

Electricity, which is mainly produced from all of the three fossil fuels as well as hydro and nuclear, exhibits price dynamics in a league of its own. Not only does it pose technical complexity because of its non-storability, it has also spurred a rich research activity in a host of related issues from generation and dispatch, to demand forecasting, to pricing and of course price risk management. The paper by Herráiz and Monroy looks at the hedging efficiency in one of the most dynamic European electricity markets in the Iberian Peninsula. More specifically, they look at a relatively simple, but novel, ‘net position ratio’ which is defined as the ratio of the final open interest to the accumulated cleared volume. Their main results confirm the effectiveness of the base load electricity contract, but are somewhat inconclusive as to the effectiveness of the peak load contract, which may be down to relatively short time series of data currently available.

If physical and derivative energy contracts are the undisputed leading assets among commodities, then gold is certainly at least as important, not only because it has been traded much longer (in the physical market), but also because it is such a popular investment vehicle for institutional as well private investors. Georgia et al. return to a familiar theme, that of gold price forecasting, but this time they use an Adaptive Neuro-Fuzzy Inference System (ANFIS). This methodology is pitched against a number of time series forecasting methods as well as a simple buy-and-hold strategy. The ANFIS is an evolution of a neural network, after being combined with fuzzy logic to predict forward prices based on historical prices and is shown to yields better results in comparison to the other methods studied.

The last two papers look more broadly at commodities in two different contexts: within an investment portfolio; and within a commodity exchange in an emerging economy. Lo and Skindilias propose a generalised constant proportion portfolio insurance (CPPI) to be applied to a commodity futures fund. Their research shows that despite the riskiness of using – highly leveraged – futures contracts, their strategy performs better than traditional CPPI strategies based on holding the physical commodity and trading it spot.

Soni analyses the Indian market which is a very interesting case of a large emerging economy, which is quite heavily involved with commodities, both as a producer, a substantial consumer and also an active trader. As a result of this exposure, there are numerous commodity futures contracts which are traded on the two main domestic commodity exchanges, NCDEX and MCX. The contracts offered spanned all major commodity groups, including energy, base and precious metals, and agriculture. The author uses these groups of commodities, in the form of commodity indices, as the basis of his investigation in the existence of non-linearities. His study finds conclusive evidence for the existence of such non-linearities for energy and metal commodities, at least, and his results alert potential investors to employ more suitable techniques when modelling prices and planning risk management strategies.