February 2014 – Volume 6, Number 1

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- **Abstracts chapters of the new CEVI book with Springer: Perspectives on Energy Risk (2014).**

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Editorial Policy

The Energy and Value Letter brings together academics and practitioners worldwide to discuss timely valuation issues in the energy sector. It publishes news from the Centre for Energy and Value Issues (CEVI), its linked organizations and others (including calls for papers), columns on topical issues, practitionersô papers: short articles from institutions, firms, consultants, etcetera, as well as peer-reviewed academic papers: short articles on theoretical, qualitative or modeling issues, empirical results and the like. Specific topics will refer to energy economics and finance in a broad sense. All of thepapers are peerreviewed. The journal welcomes unsolicited contributions. Please e-mail to **w.westerman@rug.nl** (Wim Westerman), a copy of a news item, column or a completed paper. Include the affiliation, address, phone, and e-mail of each author with your contribution. A column or news item should not have more than 400 words and a paper should not exceed 3,000 words.

A short note from the CEVI board

André Dorsman
President of CEVI

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One of the core activities of researchers is to publish articles. CEVI offers a platform for energy-related articles. In cooperation with the publisher Springer Verlag in Heidelberg (Germany), CEVI publishes a series of books on energy and valuation issues. The first book, titled Financial Aspects in Energy (FAIE) was published in 2011 and the second book, titled Energy Economics and Financial Markets (EEFM) was published in 2012. During Spring 2014 the third book will be published and the title of that book is Perspectives on Energy Risk (PER). The editors of PER are André Dorsman, Timur Gök and Mehmet Karan. The chapter abstracts are included elsewhere in this issue of the EVL. We thank the contact authors and the Springer editor, Barbara Fess, very much for their kind consent.

Finalizing one book gives space for starting up another one. The title of the fourth book is Energy Technology and Valuation Issues (ETVI). It contains three parts, namely Innovation and Regulation, Fossil Fuels and Renewables. Every part contains several chapters. The editors of ETVI are André Dorsman, John Simpson and Wim Westerman. All authors have sent us the abstracts of their chapters and we expect to receive the drafts of their chapters soon this year. All chapters will be double blinded reviewed to secure the quality of the CEVI book series.

The activities of CEVI are becoming more and more known and the spread over countries of the people who are affiliated with us is increasing, as e.g. the book series shows. ETVI is due to be published on the Fifth CEVI Energy and Value Conference in Turkey, May 2015. The local organizer will be Mehmet Karan from Hacettepe University, Ankara.

As president of CEVI, I thank everybody who contributes in the activities of CEVI. Energy is an important topic and after five years CEVI has shown to be a good platform in the energy area for scientists and practitioners. Our goal, mission and vision are included below to mark the beginning of our 6^{th} year of existence.

Center for Energy and Value Issues
CEVI

CENTER FOR ENERGY AND VALUE ISSUES (CEVI)

Goals, Mission and Vision of CEVI

CEVI aims to create knowledge accumulation on energy and value issues through establishing organization of lectures for scholars and practitioners, providing cooperation with different institutions on the national and international level.

CEVI cultivates the closely interconnected fields of energy and value including their relations to the disciplines of economics, finance, management, technology and law through providing relevant conditions for an intensive dialogue in the field of energy amongst practitioners, financial experts, economists and academic leading to advanced knowledge and capability development.

CEVI is designed to especially undertake mono-disciplinary research into the energy and value issues that has real-world policy relevance without compromising academic rigor.

Consequently the mission of CEVI is stated as;

ñ*Having the role of an important expert institution in the field of energy and value*ò

In accord with this mission the vision of CEVI is stated as;

ñ*Basing on its academic activities becoming an appreciated partner of the industry, governmental and non-governmental organizations dealing with energy and value issues*ò

In order to serve these goals, a mono-disciplinary Center for Energy and Value Issues (CEVI) is officially registered as a foundation (ñStichtingò) in the Netherlands in February 2010 and the number of the Dutch Chamber of Commerce registration is 34381087.

Center for Energy and Value Issues
CEVI

Dorsman, André, **Gök**, Timur, **Karan**, MehmetBaha (Eds.)

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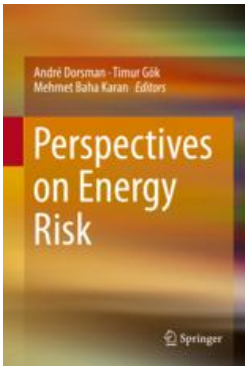

Due: March 31, 2014

ABOUT THIS BOOK

- Combines energy economics, energy finance and energy policy issues
- Contributions by scholars from all over the world
- Multidisciplinary approach

Since the Industrial Revolution, the efficiency with which energy resources are extracted and converted into work has played a prominent role in the accumulation of material wealth. The prominent role of energy resources, in conjunction with their scarcity and their uneven geographic distribution, has had significant repercussions. Collaboration, competition and conflict among nation states for energy resources have created global, geopolitical and market risks. In this volume, academic scholars and practitioners assess these risks from global, geopolitical and market perspectives. They do so by presenting empirical research and discussing our current understanding of this quickly changing and developing field.

This is the third volume in a series on energy organized by the Centre for Energy and Value Issues (CEVI). The previous volumes in the series were *Financial Aspects in Energy* (2011) and *Energy Economics and Financial Markets* (2012).

Content Level » Research

Keywords » Energy - Energy Policy - Geopolitics - Markets - Risk Management

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1. Perspectives on Energy Risk

André Dorsman, Timur Gök and Mehmet Baha Karan (eds.)

Abstract

Since the Industrial Revolution, the efficiency with which energy resources are extracted and converted into work has played a prominent role in the accumulation of material wealth. The prominent role of energy resources, in conjunction with their scarcity and their uneven geographic distribution, has had significant repercussions. Collaboration, competition and conflict among nation states for energy resources have created global, geopolitical and market risks. In this volume, academic scholars and practitioners assess these risks from global risk, geopolitical risk and market risk perspectives.

2. Changing Dynamics and Risks In World Energy: The Way Forward

Mehmet Öĵ ütçü

Abstract

The energy world has been going through some ñgame-changingò developments arising from strong demand growth in emerging economies, new supply sources, fuel diversification, technological innovations, ñresource nationalismò, investment decline, climate change and CO2 trading, as well as changing geopolitical dynamics. This paper discusses the changing dynamics of the world energy, and emerging new risks in the energy industry and major regions of production, transit and consumption. It also elaborates on the problems of energy ñdependence,ò ñindependence,ò and ñinterdependenceò before setting out the future path in the world energy and messages for key stakeholders on key energy dynamics and risks.

3. Slack Resources, Innovation and Growth: Evidence from the US Energy Sector

Abol Jalilv and Sung Min Kim

Abstract

Recent studies show that the US energy sectorôs investment (particularly by the private sector) in technology development and innovation has been declining, lagging behind other sectors in the economy, and mainly focused on the fossil fuel-based areas related to the needs of the oil and gas industry. In this paper, we offer new insights on whether the U.S. energy sector has optimally managed the deployment of different types of slack (unused) resources in pursuing investment in R&D and new technologies vs. existing assets and core efficiencies. Using a multi-industry sample of technology-intensive firms provided by the Boston Consulting Group (BCG), our results show that the energy sectorôs slack resources and R&D investment profile were, on average, markedly different from those in other sectors. The energy sector did not pursue a balanced investment strategy by simultaneously exploiting existing assets and exploring new opportunities ï being ambidextrous. Energy was the

most ñexploitativeò and the least ñexplorativeò sector with the highest (the lowest) average capital expenditures (R&D) intensities among the remaining sectors in the sample. The results also show that, in terms of longer-term profitability, the majority of other technology-intensive sectors have significantly outperformed the energy sector.

From a public policy perspective, our results call for more effective regulatory and tax policies focused on enhancing private-sector investment in energy innovation. We further believe as more adaptable technology intensive companies achieve higher profitability over time, energy firms will be pressured to better manage the balance between their slack resources and investment strategies to achieve higher performance through innovation.

4. Measuring Risks in Energy Markets

Konstantinos Sklavos and Bert Scholtens

Abstract

We provide the practitioner and academically interested in energy markets with an overview of the most often used risk measures and how they can be utilized for energy assets. The risk measures differ in their construction and focus since risk is not straightforwardly quantified. We discuss the advantages and limitations of each measure and we apply them to energy assets like electricity, natural gas, and crude oil.

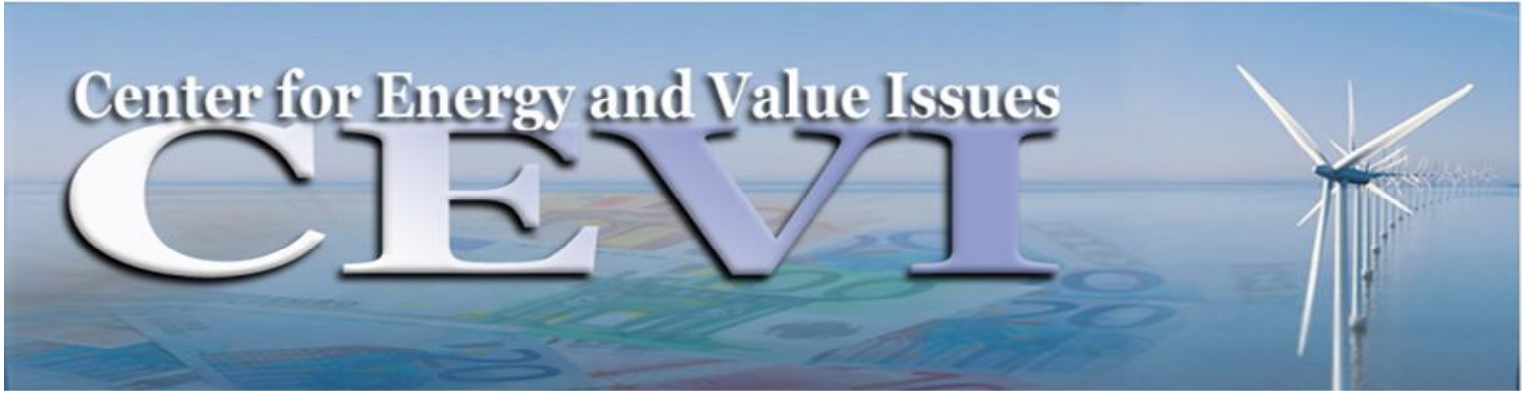
5. The Natural Gas Revolution and Central Asia

Bob Kolb

Abstract

This article examines the ongoing natural gas revolution and assesses its impact on the energy industry and societies of Central Asia, conceived as the five ñStansò: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. The natural gas revolution consists of three related technological developmentsð hydraulic fracturing, horizontal drilling, and the increasing build-out of the world liquid natural gas (LNG) infrastructure.

The article focuses on Turkmenistan and its rich reserves of natural gas and explores the conditions under which Turkmen gas currently reaches international markets through pipelines to China, Iran, and Russia. It also assesses Turkmenistanôs future prospects for reaching additional world markets and for sustaining the markets it presently serves. Finally, the article analyzes the difficulties that Turkmenistanôs gas industry, and other Central Asia energy industries, are likely to face.



6. The Influence of Economic, Financial and Political Indicators in South East Asian Electricity Markets

John Simpson

Abstract

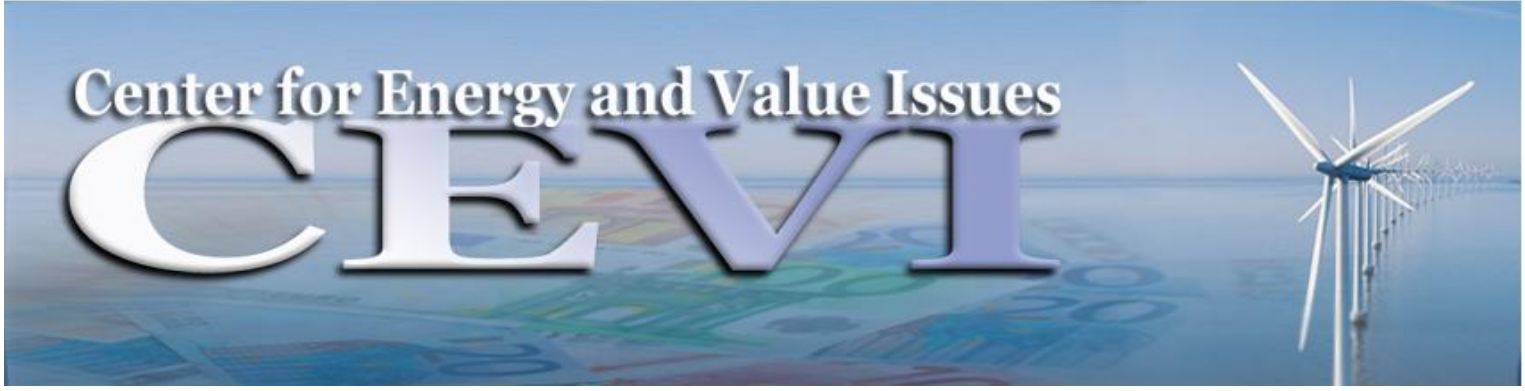
Dynamic models of electricity pricing in South East Asian countries are studied in this Chapter. The motivation is to attempt to explain the extent of regulation in South East Asian electricity markets using political, economic and financial indicators as reflected in risk ratings and energy stock market sectoral data. Electricity market models in China, Thailand and the Philippines show evidence of cointegration, implying relative market efficiency and deregulation in those countries in the long-term. Those in Malaysia and Hong Kong are not cointegrated implying that electricity pricing in those countries has little to do with domestic and international financial, economic factors over the long-term. This in turn indicates significant government pricing interference in the case of Malaysia and domestic share market influences in the case of Hong Kong. In their demonstration of long-run equilibrium and short-run exogeneity effects, the specified models of can be useful in studies of electricity market deregulation. The results may be useful as a starting point to analyse long-term and short-term electricity pricing policy.

7. Geopolitical Market Concentration (GMC) Risk of Turkish Crude Oil and Natural Gas Supply

Özgür Arslan-Ayaydin and Inna Khagleeva

Abstract

This chapter explores the geopolitical risk of Turkeyôs crude oil and natural gas diversification portfolios. We use the methodology of Chaterjee (2012) to forecast the Geopolitical Market Concentration (GMC) risk of Turkeyôs diversification portfolios under worst and best case scenarios. In our forecast, we use a selection of parameters derived from the GMC risk model of Blyth and Lefèvre (2004). Our analysis is based on the number and the political stability of countries supplying crude oil and natural gas to Turkey. The results that we obtain are robust to the choice of parameters in the double exponential smoothing method, which we use for forecasting.



8. Re-examining Turkey's Potential of Becoming a Natural Gas Transit Hub

Mehmet Baha Karan, Coşkun Küçüközmen and Arif Aktürk

Abstract

The aim of this study is to investigate the potential for Turkey to play a role as a natural gas hub in view of its location adjacent to the most important gas producer and energy consuming countries. In spite of the importance of the location of Turkey for the energy security of the EU, the current gas stream to Turkey and infrastructure are inadequate due to technical, political and economic factors affecting the Southeastern European energy corridor. During the last 15 years, Turkey has achieved considerable reforms in energy markets and complied with all directives of the European Union. However, Turkey still needs to adopt a more transparent framework regarding liberalization of its internal energy market. Our study shows that Turkey should not only improve her market structure, but also continue to develop new projects that will improve her position in the competitive world energy environment. Turkey is in a key location in this international game: in addition to the current BTE pipeline, TANAP is the most promising pipeline passing through Turkey in the east-west energy corridor. A SWOT analysis reveals many factors that favor Turkey as the major European natural gas transit hub. However, many obstacles that may hinder the achievement of its full potential remain.

9. Hedging and Speculation: A Discussion on the Economic Role of Commodity Futures Markets (Including the Oil Markets)

Hilary Till

Abstract

In the United States, there is a rich historical experience with controversies over futures trading that date back to the nineteenth century. After a brief recounting of history, this chapter notes that a review of U.S. history provides valuable lessons in figuring out what is necessary for commodity futures trading (including oil trading) to continue and prosper during times of political pressure. Essentially, one finds that the following actions have been indispensable in responding to past controversies over futures trading: (1) an increase in transparency in showing how these markets actually work; and (2) an improvement in public education on the economic usefulness of commodity markets. This chapter endeavors to help in providing precisely that education.

10. The influence of renewables on the German day ahead electricity prices

N. Abudaldah, A.B. Dorsman, G.J. Franx and P. Pottuijt

Abstract

During the last five years European wholesale electricity markets have been confronted with a rapid increase in Renewable Energy Source (RES)-generation. RES-generation is characterized by (1) more decentralized production at typically dissimilar locations compared to traditional production and (2) more intermittent patterns of production depending on weather conditions. This chapter will focus on solar and wind energy, which have in common that they cannot be ordered to our disposal when we need them. However, the share of these renewables in the total energy supply in Germany has increased to such levels that the electricity prices on the day ahead spot market depend highly on the expected supply of solar and wind energy. In addition, regulations in favor of RES-generation in Germany have forced the Transmission System Operators (TSOs) to use all generated solar and wind energy. On windy and sunny days this has led to some exceptional cases of negative energy prices. This chapter identifies the influence of solar and wind energy supply on day ahead electricity prices.

11. Corporate financing and investment decisions in the renewable energy sector

Halit Gonenc and Nalbertina Yurukova

Abstract

Increasing investments in renewable energy (RE) are expected to contribute to the growth of the energy sector as a whole, and thus to general economic growth. Recent research indicates that increasing investments in RE has several potential benefits such as achieving sustainable economic recovery from the financial crisis, ensuring a countryôs energy security, and fighting climate change and environmental pollution. Apart from public support in the form of energy policies and mechanisms such as governmental grants and subsidies, the growth of the RE sector largely depends on private external financing. This chapter analyzes the corporate financing and investment activities of RE companies by focusing on firm-level and country-level factors. An investor protection perspective is taken when choosing the country-level factors, since the type of external financing obtained by companies is largely driven by outside investorsô willingness to supply it. Given the growth opportunities of firms, the evidence indicates the importance of the relationship between debt level and investment.

12. Prospective Costs for the Aviation Sector of the Emissions Trading Scheme

Gerard Mooney, Call Muckley, Don Bredin

Abstract

This chapter analyses the cost impact to the aviation sector of the European Union Emissions Trading Scheme (EU ETS) being extended to include the sector. To motivate our cost impact simulation work, we initially study ultra-high frequency data utilising the December 2012 European Union Allowance (EUA) futures contract. We find evidence indicative of EU ETS market efficiency. Hence, we inform our simulation specification using information set related to fundamental price determinants. We find a minimal cost impact of an EU ETS extension to the industry sector of almost 9 billion Euros for the period 2012 to 2020. Such a material cost accrues from a nominal price of 10 Euro per tonne of CO_2 emissions. This chapter contributes to emerging research on the cost impact of the EU ETS to the aviation sector.