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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, practitioners' 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. 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 600 words and a paper should not exceed 5,000 words, albeit that occasionally larger pieces can be accepted.





And now up to the Miami conference!

André Dorsman President of CEVI

VU University Amsterdam, The Netherlands e-mail: <u>a.b.dorsman@vu.nl</u>

Although jumping to conclusions is something that both practitioners and academics should beware of, the great European summer of 2018 might be another signal that the Global Warming ghost is among us. It was one of the major issues debated at the 13th ISINI conference in Wroclaw (Poland, 29-31 August) that CEVI contributed to with no less than six papers. We congratulate ISINI's with the success of its conference and hope that we can do the same at our 7th conference in Miami Beach, 23-25 May, 2019. To Joost Platje, Johan van Ophem, Wim Lambrechts, Jarl Kampen and the local Polish team: well done!

Meanwhile, Erdinç Telatar (Okan University, Istanbul) and Mehmet Baha Karan (Hacettepe University, Ankara) started up the preparations for the conference only a few months ago. Quickly, Harry Lepinske from the Central Asia Research and Productivity Center in Chicago joined them. CEVI has cooperated with this center several times and we are happy that it joins forces with us. With the help of many others, including our US board member Özgür Arslan-Ayaydin, they work hard to make both the practitioner's day and the academic day a success.

And now it is up to us. If you are a practitioner, we are happy to hear about your progress on energy and value issues. Contact one of the organisers and show us your projects. Do not be afraid of friendly but tough comments, since this is what you can learn from. If you are an academic, you are welcome to send in your working papers, see the call for papers below. Since ISINI will again be present, papers in the ISINI fields are welcome as well. Send these to: johan.vanophem@wur.nl and to the CEVI organisers. Publications in the EVL, our Springer book series or the ISINI-linked journal CEREM are open to all.

As promised in the last EVL issue, the sixth CEVI book has indeed been published by now. We congratulate the editors (André Dorsman, Mehmet Karan and Volkan Ediger), the (contact) authors and Springer (Barbara Fess) with the fine book! Due their kind consent, we are able to publish the abstracts of the chapters in this edition of the EVL. Meanwhile the seventh CEVI book, edited by André Dorsman, Özgür Arslan-Ayaydin and James Thewissen, is underway. Under the title: "Financial Implications of Regulations in the Energy Industry" (FIREI), about 15 teams are at work with their drafts. Also, papers on various topics are welcome in the ISINI-linked journal CEREM, see the enclosed Call for Papers.

Summing up: we celebrate the successes of the 6th CEVI book and the ISINI conference, but we have to move forward to keep on track. While the 7th CEVI book is getting shape, we first of all look forward to the CEVI conference in May 2019. Okan International University in Florida will welcome us warmly. With little more than half a year ahead of us, it is time to seriously prepare: up to the Miami conference!

CALL For PAPERS

7TH MULTINATIONAL ENERGY AND VALUE CONFERENCE

May 23-25, 2019, Miami, USA

Okan International University, Miami, USA

Center For Energy and Value Issues (CEVI), Amsterdam, the Netherlands

Energy Markets Research and Application Center of Hacettepe University, Ankara, Turkey

Central Asia Research and Productivity Center, Chicago, USA

http://www.centerforenergyandvalue.org/conferences.html

The objective of the conference is to bring together academics and practitioners from all over the world to focus on timely energy finance and investments, financial performance, energy markets and valuation issues in the energy sector. Papers dealing with developed as well as developing countries are welcome. *Specific topics* must refer to energy issues and include, but are not limited to:

Financial Regulation; Financial Markets; Financial Risks; Asset Pricing; Value at Risk; Capital Structure; Sourcing Capital; Corporate (Re-) Structuring; Corporate Governance; Behavioural Finance; Financial Performance; Cost Control; Financial Accounting; Fiscal and Legal Issues.

The first day of the conference includes practitioner presentations on topics such as; energy strategy, regulation, law and energy security. Senior business and government leaders from different countries share energy-related business opportunities in their markets.

Please submit your papers (completed or nearly completed) or participation interest via e-mail to: Dr. Kazım Barış Atıcı (kba@hacettepe.edu.tr) or Dr. Yılmaz Yıldız (yilmazyildiz@hacettepe.edu.tr), by 15 January 2019. Authors will be notified regarding the acceptance of their papers after reviewing. Final acceptance of full papers will be notified by 30 January 2019.

The title page should include the affiliation, address, phone, and e-mail of each author together with the appropriate JEL classifications. Each participant agrees to serve as a discussant of a paper of his/her own area of interest, if needed.

Papers selected for this conference may be submitted for possible publication in a CEVI book, dedicated to this conference by *Springer Verlag*. All submitted papers will be subject to a blind peer review process. Further information regarding conference organisation and accommodation, travel arrangements, fees and activities will be published on the conference website in due course. For any inquiry regarding the submission process and registration at the Conference please contact Dr. Kazım Barış Atıcı by e-mail at: <u>kba@hacettepe.edu.tr</u>

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Erdinç Telatar – Okan International University, Miami, USA Harry Lepinske - Central Asia Research and Productivity Center, Chicago, USA Mehmet Baha Karan – Hacettepe University, Ankara, Turkey

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This volume investigates the impact of energy issues on geostrategy. The crucial importance of energy and the fact that fossil fuels are not equally distributed among countries means that decisions are not only based on financial arguments, but also on the political impact. It can be said that "Energy is Politics". In three parts - 1) Energy Economy; 2) Finance; and 3) Geostrategy - academics and practitioners address both economic and political questions and present cases from several countries.

This is the sixth 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), *Energy Economics and Financial Markets* (2012), *Perspectives on Energy Risk* (2014), *Energy Technology and Valuation Issues* (2015) and *Energy and Finance* (2016).



Abstracts of: André Dorsman, Volkan Ş. Ediger and Mehmet Baha Karan, Energy Economy, Finance and Geostrategy, Springer Verlag, 2018.

Ch. 1. Introduction: Energy Economics, Finance, and Geostrategy

André Dorsman, Volkan Ş. Ediger and Mehmet Baha Karan

Abstract:

Since countries' economic independence is based on energy security, decisions on energy economy and financing are assessed mainly by geostrategic considerations. Economically optimal decisions are not enough regarding geostrategy. This situation makes it difficult to make decisions in energy markets, and it creates considerable controversy. The role of financial markets is to measure the risk of this complex structure or energy projects and price them in financial basis. Understanding behavior of energy markets, it is necessary to look at them on an event basis. The limited availability and unequal distribution of energy sources and different pricing and cost mechanism of energy supplies are hardening to arrive a simple solution. Therefore, the research articles of this book are aimed to open new perspectives for the reader and researchers.

Ch.2. Geostrategic Considerations on Energy

Rafet Akgünay

Abstract:

After the Cold War was over, during the last decade of the twentieth century, there was a brief period during which there were hopes for a better future in the world. Various organizations and several countries replaced the term of "threat assessment" with "risk analysis." Alas, it was not very long before this concept became outmoded in a relatively brief period. Risks, such as terrorism, proliferation of mass destruction weapons and their delivery means, extremism, trans-national illegal arms, narcotic and people trafficking, uncontrollable refugee crisis have led to a dangerous uncertainty in international relations. On top of all these, growing number and magnitude of unstable areas especially in the Middle East has become a major concern for the global community. This concern is exacerbated by the mere fact that almost all these alarming events take place in and around the areas of hydrocarbon-based energy sources as well as their transportation routes.

Developments such as the emergence of new overpopulated urban centers in Asia and of the concerns about climate change are also the agenda items that are closely related to the energy issues and these issues are closely followed by the world public opinion.

It is the intention of this paper, to address the geostrategic ramifications of these unfolding events and threats that are closely linked to major hydrocarbon based energy sources. After all energy and energy security have always been an important issue in world politics since the industrial revolution.



Ch. 3. System Dynamics Simulation to Explore the Impact of Low European Electricity Prices on Swiss Generation Capacity Investments

Reinier Verhoog, Paul van Baal and Matthias Finger

Abstract:

European electricity markets are coping with low energy prices as a result of overinvestments in generation capacity, subsidies for renewables and the financial crisis of 2008. In this chapter we explore the implications of low electricity prices on the Swiss electricity market, which is facing the additional challenge of phasing out nuclear power plants and market liberalization. System Dynamics is utilized to model and simulate the long-term impacts on investments in new generation capacity, security of supply and future electricity prices. Monte Carlo simulation results indicate that the current low electricity prices are likely to persist for another decade. The most likely response to the low prices is an underinvestment in generation capacity, with the risk of an energy crisis and price spikes as it coincides with the decommissioning of nuclear power plants. There is little evidence this will lead to boom-and-bust investment cycles. Finally, in the long-term we observe a shift towards renewable energy sources and natural gas fired power plants, resulting in more volatile electricity prices. These findings are similar to earlier studies of the liberalized German and Belgian electricity markets, which are also facing the challenges of a nuclear phase-out under depressed European prices.

Ch. 4. Effectiveness of Regulation: An Investigation of the Turkish Natural Gas Distribution Market

Okan Yardimci and Mehmet Baha Karan

Abstract:

In this chapter, the effectiveness of regulation in the Turkish natural gas distribution sector is investigated by examining EMRA's implementations and the performances of the companies. The analyses were taken into account mainly in the context of the effectiveness of regulation rather than in drawing conclusions with respect to economic paradigms, like market failure. The important regulations with regard to the Turkish natural gas distribution sector were analyzed within the scope of the differences between the various planned and recognized situations. Thus, it was understood that some of the regulations did not produce effective results. Particularly the comparison between private and state-owned companies concerning their performances and R&D expenditures revealed the alienation experienced from the expected benefits of liberalization. The regulations to encourage sector development and cost reduction through R&Ds have not been properly implemented. The obtained results are considered as partially regulatory failure.



Ch. 5. The crowding-out effect of green energy innovation

Özgür Arslan-Ayaydin, James Thewissen and Wouter Torsin

Abstract:

The U.S. government annually invests \$700 million in the research and development of green energy. Yet, the question whether corporate research in green energy leads to increased corporate performance remains unanswered. Based on a sample of 130,000 patents granted by 212 U.S. firms between 1975 and 2006, this chapter tests and compares the impact of green and non-green energy innovation on firms' financial performance and value. While innovation increases firm performance and value, we find that innovation in green energy has a significant and negative impact on future operating performance and reduces firm value. These results suggest that firms crowd out more profitable non-green projects for green innovation, thereby reducing their value and performance. We further find that investors understand this crowding-out effect of green innovation, as the market reacts negatively around and after the granting date of green energy patents.

Ch 6 Analysing the Relationship between Oil Prices and Basic Petrochemical Feedstocks

Elkhan Hasanov and Mübariz Hasanov

Abstract:

In this paper we analyse the relationship between crude oil prices and prices of basic petrochemical feedstock. In particular, we estimate dynamic effects of Brent oil prices on naphtha, benzene, ethylene, propylene, acrylonitrile (ACN), vinyl chloride polymer (VCM), purified terephthalic acid (PTA), and monoethylene glycol (MEG). We first analyse cointegration properties among these variables using bounds testing approach. Then we estimate error correction models to assess long- and short-run effects of oil price changes on prices of these petrochemical feedstocks. We find that naphtha prices move one to one with oil prices in the long run. Prices of other feedstock react less than unity in the long run. We also find that only prices of benzene and naphtha react more than unity in the short run whereas prices of propylene and ethylene react less than unity to changes in oil prices.

This study fills a major gap in the empirical literature. Although the dynamic interactions among oil prices and fuels as well as other macroeconomic and financial variables have been widely investigated in the literature, the relationships between oil and petrochemicals prices have not been thoroughly analysed. Second, the results of this study have clear policy implications. In particular, we find that prices of basic petrochemicals do not move one to one with oil prices. This finding implies that oil price fluctuations are not fully transmitted to prices of industrial products, and hence oil price changes will have only limited effects on economy. Furthermore, this result also implies that oil companies and oil exporting countries may use petrochemical goods as hedging instruments against oil price falls.



Ch. 7. Ranking of Natural Gas Transmission Projects at the Southeastern Corridor: A Multi-Criteria Approach on the Countries of the Region

Mehmet Baha Karan, Aydın Ulucan, Arif Özden

Abstract:

The southern energy corridor of Europe has been the subject of the main political developments and investment projects over the last decade. While Europe is focusing on energy needs and security, the energy-producing countries want to increase economic benefits by increasing their strategic importance. Turkey, which is placed between them, has a chance to become an energy terminal. In this study, Turkey's available and potential gas transmission projects, including pipelines and LNG, are ranked by using a multi-criteria decision-making technique, namely ELECTRE. The method, which uses quantitative and qualitative variables such as investment cost, geopolitics, country risk, and trade volume, reveals that the Israel-Turkey offshore project is the most suitable one for securing natural gas demand of Europe. The same methodology also implies that the Israel-Turkey offshore project is the best also for Israel. Lastly, the sensitivity analysis, which is applied using parameters of different scenarios to reflect the uncertainties in the decision-making process shows that this project is a priority for both countries as the interests of the two countries overlap. Moreover, our work has also indicated that scenarios that would make the second priority project of the countries are not realistic.

Ch. 8 The Relationship Between Foreign Direct Investment and CO₂ Emissions Across a Panel of Countries

N. Yaşar and M.E. Telatar

Abstract

This paper analyses the relationship between foreign direct investment inflows and pollution emissions for 139 countries during the period of 1970-2015 and the countries are classified into four groups regarding to the World Bank income ranking. The main motivation of this study is to analyse, whether the causal relationship differs between different income groups. For this purpose, panel ARDL (Auto Regressive Distributed Lag) boundary approach and Granger causality test are used. The results of the study indicate that the causal relationship between FDI (Foreign Direct Investment) and CO_2 emissions differs depending on which income group country belongs to. We conclude that, while there is not statistically significant short-run causality relationship running from FDI to CO_2 emission for high income, upper middle income and low income group countries, the pollution haven hypothesis is supported for lower middle income group countries.



Ch. 9. Geostrategic Challenges in the Oil and Gas Sectors

Volkan Ş. Ediger and İstemi Berk

Abstract:

This chapter identifies the major geostrategic challenges that have emerged during the last two decades and assesses their implications for the global oil and gas sectors. The historical development of oil prices shows that there have been two major periods of volatility, 1973-1986 and 1998present, each of which was preceded by two relatively stable periods. The two oil price shocks of the 1970s that were triggered by geopolitical events had long-term effects on global politics and economics. Major oil and gas producers faced the challenges of declining consumption on the demand side, as consumers turned to alternative energies, energy efficiency improved, and non-Organization of Petroleum Exporting Countries (OPEC) oil supplies increased. The crisis in the 2000s, on the other hand, had similar but more intense consequences, deeply altering the structure of oil and gas markets. We identify two major challenges facing the oil and gas industry: energy substitution and resource scarcity. While the substitution of coal and renewables threatens to reduce oil and gas demand, resource scarcity is expected to promote the development of unconventional hydrocarbon resources such as shale oil and gas and heavy oil. Unlike in the 1970s, oil consumption did not decline when oil prices peaked in the 2000s. Moreover, the recent fall in oil and gas prices created a fiscal challenge for conventional producers, such as OPEC countries, and non-OPEC countries like Russia and Mexico, whose governmental budgets depend on export revenues. These fiscal challenges are expected to increase competition between national oil companies (NOCs) and international oil companies (IOCs), necessitating structural change in the governance of the industry. The NOCs are expected to continue dominating the industry and due to the increasing intervention of the corresponding governments, the next decades could experience a rise in state capitalism not only in major oil and gas producing countries but also in the global energy business.

Ch. 10. Geostrategy of the European Union in Energy

André B. Dorsman, Andries Nentjes and Petr Polak

Abstract:

Among the many problems the European Union (EU) is facing, the energy question is an important one. Climate change forces the EU to reduce the use of fossil fuel. However, security of supply of energy relies heavily on the use of fossil fuel. This creates a dilemma for EU policy. The pollution caused by gas is less than the pollution of the other fossil fuels such as coal and oil. Therefore it seems reasonable that the first reduction will take place in the use of coal and oil and later on gas. This brings us to the next problem, namely that the EU is dependent on the gas import from politically instable countries. In this chapter, we will pay attention to the reduction of the use of fossil fuel as well as to the EU policy on gas import. We give an overview of the steps that the EU has taken and shall take to realize her goals for the coming years. To secure the availability of energy the EU will face a high gas dependency for quite some time.



The gas market knows a number of instable countries, which makes energy a difficult political issue. The EU has to speak with one voice. In the EU every member country has a blocking vote, which weakens the position of the EU in the negotiations with non-EU gas suppliers. An alternative is the Energy Union, where the member countries have no blocking vote but takes their decisions based on the majority of the voting countries. To operate as one block is a better position than when EU-members negotiate bilaterally.

Ch. 11. Geostrategic Importance of Energy Transit and a New Transit Regime under the International Energy Charter

Volkan Özdemir

Abstract:

The energy transit constitutes one of the critical components of energy value chain, since it frequently involves transport and access issues as robust energy trade can only take place with access to a well-connected and well-managed transmission network. Issues such as feasibility of investments, non-discriminatory access to infrastructure and related legal regulations have elevated energy transit security to top of the energy security agenda. A search for reliable transit of energy goes parallel with multi-dimensional, evolving and administrative nature of energy security as well as with geostrategic calculations of the leading actors. Currently there is no internationally binding agreement which regulates the energy transit since transit provisions of World Trade Organization and Energy Charter Treaty are vogue. An international transit protocol has been discussed under the Energy Charter Treaty for decades, but the process has not reached an agreement. Various regional markets such as EU market have developed their own energy regulations and thus most of the transit issues within the union were solved. Nevertheless, there is still lack of an energy transit regulation in wider Eurasia (specifically from China to Turkey including Caspian states). In that sense, a more modest form of transit regime could be applicable for a specific region rather than an international one. In this paper, the geostrategic importance of energy transit and possibility of a new regime under the International Energy Charter will be discussed with a specific reference to energy market developments and new geopolitical realities in Eurasia where such kind of a regional transit community could be achieved.





Ch. 12. Geostrategic Importance of East Mediteranean Gas Resources

Sobhet Karbuz

Abstract: A series of major natural gas discoveries and the prospect of substantial hydrocarbon resources waiting to be tapped beneath the Eastern Mediterranean waters have sparked major international interest. If developed in a timely and successful way, current and future discoveries may significantly change the energy picture of the region. Exploitation and export of these resources will require overcoming numerous challenges with geopolitical implications. As a matter of fact, being perhaps the only common denominator, energy will increasingly become a main component of the geostrategic struggle in the East Mediterranean and its surroundings. The article discusses the exploration, ongoing and planned field development and production activities, the possibilities of gas exports and trade destinations, the options for export infrastructures, and the effect of recent discoveries in Egypt in the Levant region. It will also give an overview of the potential impact of all these issues on the conflict-laden geopolitical landscape of the region in terms of adding a new dimension to establish the power balance. Whether hydrocarbon resources will be a force that unites or one that fuels conflict is hard to anticipate. The article will argue that if not managed carefully, and unless developed for the benefit of all, those resources may fuel confrontations, add frictions and anxieties to an already volatile region, and will shrink the room of optimism for finding a common ground.

Ch. 13. The Natural Resource Curse: A Country Case Study - Tanzania

Vera Bekkers and Bartjan Pennink

Abstract: This research aimed to uncover factors that can help developing countries with significant amounts of natural resources in avoiding the so-called 'natural resource curse'. Previous studies show mixed results; some countries show a surge in economic growth, whereas others end up with conflicts and environmental degradation, i.e. the natural resource curse. Posing local economic development and innovation as sources of national economic growth (the antithesis of the natural resource curse), this case study involved semi-structured interviews with various local stakeholders on the topic of recent natural gas findings in Tanzania. From the analysis of the interview data, a number of factors were uncovered that may lead to positive outcomes of resource exploitation and to chances to incorporate the interests of local communities. These factors include (1) the government, (2) knowledge and education, (3) local partic*ipation*, (4) *revenues*, (5) *transparency*, (6) *legal issues*, and (7) *finance and capital*. Then, three scenarios were developed that give deeper insight into possible futures for the natural resource exploitation, using the previously identified factors. Lastly, a multi-criterion analysis (MCA) showed that the importance ranking of these factors is stable across a measure of needed change and a measure of uncertainty in the future. These seven factors then, can be seen as crucial for a successful exploitation and for creating opportunities for the local actor. Combining the qualitative scenario descriptions with a more quantitative MCA approach strengthens the results of this research.



Call for Papers: Central European Review of Economics and Management (CEREM)



The Central European Review of Economics and Management (CEREM, www.cerem-review.eu) focuses on state-of-the-art empirical and theoretical studies in the field of economics and management. It aims to create a platform for exchange of knowledge and ideas between research, business, governmental and other actors. Besides more traditional scientific papers, the journal welcomes conceptual papers, opinion papers and policy discussions from academic, corporate, governmental and civil society representatives.

An important aim of CEREM is to stimulate open-minded discussion of new ideas, new applications of old ideas as well as development of interdisciplinary approaches to current challenges in economics and management. This is of particular importance in the substantial changes that have taken place and are expected to take place in the world. Topical economics and management focus areas are interdisciplinary, non-unified and on the move by nature. They include, but are not limited to issues regarding: sustainable development, emerging economies, European strategies, value chains, financial intermediation and managerial designs.

The principle of double-blind peer review applies. Contributions should be original and previously unpublished. Articles submitted to CEREM should not be under consideration for publication elsewhere. Feel free to contact prof. Joost Platje via: **johannes.platje@wsb.wroclaw.pl**