CEVI
Centre for Energy and Value Issues

Energy and Value Letter

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http://www.rug.nl/feb/energyandvalue

Energy and Value Letter

Editorial Board

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 organisations and others (including calls for papers), 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 finance in a broad sense. Most of the publications are on invitation, but the journal welcomes unsolicited contributions. Please e-mail to **energyandvalue@gmail.com**, c/o Özgür Arslan, a copy of a news item or a completed paper. Include the affiliation, address, phone, and e-mail of each author together with appropriate JEL classifications with your contribution. A news item should not have more than 400 words and a paper should not exceed 3.000 words.

Energy and Value Letter

INTRODUCING THE FIFTH ENERGY AND VALUE LETTER

John Simpson
Editor-in-chief

Curtin University of Technology, Perth, Western Australia
e-mail: simpsonj@cbs.curtin.edu.au

This issue of the energy and value letter is a special one in the sense that we give the pen to two people who have much experience in corporate finance practice. First of all, John Farthing gives an insight on what academics are keen to analyse, but what they mostly have hardly witnessed if at all, namely how trading of energy commodities takes place from the point of view of a trader. John's article gives nice insight in what happens in the daily life of a typical trader. His United Kingdom and European point of view will ring a bell with many other experiences all over the world. And perhaps many readers will also be glad that they are busy with less thrilling activities than a trader.

Secondly, Erik van Dijk argues that in the upcoming 10-20 years energy will become a central factor in economic and financial analyses of countries. Energy rich emerging and frontier countries will be able to translate this resource into improved wealth. On the other hand, energy-poor (emerging markets) countries may find themselves confronted with serious risks. They will need to specialise in for instance providing services to energy-rich nations. Erik Van Dijk thinks that renewable and nuclear energy in combination with technological innovation might mitigate things. However, the Japan catastrophe and realism about renewable energy will urge to take a long term perspective here.

At the time of writing, Professor Wim Westerman of the University of Groningen is hard at work coordinating the organisation of the Third Multinational Energy and Value Conference timed for early July 2011 at the University of Groningen. Another reminder is provided herein for possible late starters. In this issue, Professor Andre Dorsman, President of CEVI, also provides an update on CEVI news which includes news on the recent successful energy training school in Istanbul, an update on forthcoming book publications and planned publications and another mention regarding the forthcoming Multinational Energy and Value conference.

We all look forward to a successful period over the next few years in all of the areas of CEVI involvement and I particularly look forward to meeting readers, researchers and other friends of CEVI in July in Groningen.

Energy and Value Letter

A SHORT NOTE FROM THE CEVI BOARD

André Dorsman
President of CEVI

VU University Amsterdam, The Netherlands
e-mail: adorsman@feweb.vu.nl

The activities of CEVI are increasing. In September 2010, we had the first CEVI Energy School in Ankara, followed by the second one in Istanbul in February 2011. Mehmet Karan did a great job in organizing both of the schools. We welcomed more than fifty attendants. The third Energy School will be organized in Ankara in the fall of 2011.

Our first book, Financial Aspects in Energy (FAIE), is on schedule and we expect to launch it at the CEVI Energy conference in Groningen in July this year. Every chapter was reviewed by two persons. The review process took some time, but helped to assure a high quality of the contributions. The second book is titled: Energy: Macro Economics and Financial Markets and exists of four parts, namely: part 1: supply and demand; part 2: the dynamics of energy derivatives markets; part 3: environmental issues and renewables and part 4: finance and energy. We are planning to publish this book in 2013.

The publisher suggested speeding up the book series. However, during the board meeting of Wednesday February 9 2011, we decided that quality is more important than quantity and that one book in every two years is fine. During the CEVI board meeting of July 2011 we will discuss the content of the third book. You are invited to send your suggestions to Wim Westerman: w.westerman@rug.nl.

The third CEVI conference will be organized in Groningen, July 7-10 2011. Our host is Wim Westerman, of the University of Groningen. Groningen is located in the Northern part of The Netherlands. Since the sixties of the last century there is gas winning in the area of Groningen and the university does much on energy research and education. After this third conference organized in Europe we will go to the USA, to have our fourth CEVI conference in Chicago in 2013. Our host in Chicago will be Paul Prabhaker. Paul is associate dean of the NIU (Northern Illinois University) College of Business.

CEVI wants to narrow the gap between scientists and practitioners in the energy area. After developing some activities in the scientific and educational areas, we are grateful that CEVI will also organize a consultancy meeting in Ankara in May 2011.

Step by step, our organisation is growing in number of participants and in activities. As president of CEVI, I welcome your participation in the growth of CEVI.

Energy and Value Letter

3rd Multinational Energy and Value Conference

University of Groningen, Faculty of Economics and Business

http://www.rug.nl/feb/energyandvalue

July 7 – 10, 2011, Groningen, The Netherlands

The objective of the conference is to bring together academics and practitioners from all over the world to focus on timely 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.

Please e-mail to **w.westerman@rug.nl**, c/o Prof. Wim Westerman, by the *17th April 2011*, a copy of a completed or nearly completed paper. The title page should include the affiliation, address, phone, and e-mail of each author together with appropriate JEL classifications. Each participant agrees to serve as a discussant of a paper of his/her own area of interest, if needed.

Selected papers may be submitted for publication in the "Energy and Value Letter", edited by the Center for Energy and Value Issues (CEVI), or in a book to be published by Springer Publishing.

The conference also includes practitioner presentations, the launch of the first CEVI book and a special function on the third day. Updated conference information will be mailed to the conference participants regularly and is available to others upon request.

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CEVI Centre for Energy and Value Issues

Energy and Value Letter

A Day in the Life of a Trader

John Farthing[1]

APX-ENDEX, London, United Kingdom
e-mail: J.Farthing@apxendex.com

Abstract

The author is recalling his experience as a broker on the commodity futures market, the things he had to deal with each day. He went out to speak to some power traders to give more of an insight to the current energy market and put the two together. By putting the two together, a description of a typical day in the life of a UK and European energy trader has come out.

1. Introduction

One of the exciting things about being a trader is not knowing what events will affect the market each day, and how the market will react. An example of this is the terrible events that have happened in Japan recently. With the devastating earthquake and tsunami taking Japans nuclear generation off line, it has left Japans energy resources heavily relying on LNG. Reports came out saying that they may need to import as much as 10 million metric tons more a year due to the effects of the earth-quake. Due to safety fears the German government decided to halt seven of the oldest nuclear reactors following the explosion at the atomic plants in Japan. This made the markets nervous and pushed power and gas prices to their highest level for two years. The following week prices dropped over 5 % as the market thought the previous weeks gains were an over reaction to Japans nuclear crisis. In-formation is a major part to the trader's success, and the following is a small insight into the life of a trader's working day.

2. Starting up

Nowadays the trader's day starts on his way in to the office. With their Blackberry in hand the first task of the day is to read and sort out all the emails that have been received since leaving work last night. The bulk of emails will be from the shift desk, informing of any changes to supply and demand in the market, and the most up to date situation of the companies own position.

Once at their desk its time for the traders to boot up the PC's, making all their screens come to life. A trader usually has 4 to 6 screens around him. The screens fill up with different news vendors, like

[1] John Farthing is Training Services Manager at the energy exchange APX-ENDEX, which operates spot and futures markets for electricity and natural gas in the Netherlands, the United Kingdom and Belgium.

Reuters, Bloomberg and various other news organisations. Other screens will have the trading platforms from energy exchanges to broker screens. The way all these screens are huddled together is a very personal thing. When the market is frantic and you have to trade quickly and under pressure you do not want to be searching around for the right screen.

A prompt trader will be at his desk by 06:30 and will first start to look at the supply and demand balance. The trader will start to check information on the Balancing Mechanism Reporting System (BMRS) regarding Demand and Generation. Availability of this data is market dependent. Most companies collate and interpret this data using real time data integration software.

Next to supply and demand data there are many other things that the trader needs to look at. Weather is a very important factor in energy. A trader will be looking at forecasts, any dramatic changes from the previous day's forecast, and with wind generation steadily rising this will start to play a significant part in the market. A trader would probably obtain data from several different providers who specialise in weather analytics. Also the trader will be looking at general economic data from around the world. This information would be normally taken from newswires like Bloomberg and Reuters and would be tailored to the trader's specific requirements.

Traders will make sure that their forward trading positions are the same as they where when they left them the previous night, so internal position checks are made. Now the trader is ready for the market opening.

3. Morning trade

Power and Gas markets open from 07:00 GMT. Traders will now start to take positions either on a proprietary basis or on behalf of their clients. If a company trades in different countries it may have to trade in different auctions, and this can become quite a task.

The decisions on what to trade and at what price are being made on all the information that is available to the trader. Now that trading is well under way more information is arriving and brokers will be calling via telephone or via squawk box, offering prices and volume. Trades done through brokers are classed as OTC trades (Over the Counter). The majority of trading is done this way, from Day-Ahead to next year, or as it is known, "further down the curve".

Daily option expires usually take place around 8 o'clock. These options are usually for the Day-ahead period. The trader will look at transmission capacity available and decide whether or not to utilise any long term (monthly, annually).

From around 08:30 traders will start to look to close out any positions for the Day-Ahead delivery. It may be decided to close out via exchange trading instead of via a broker. This would be done via the power auction. The power auction offers standardised hourly contracts for the day ahead. Trading done on the exchange is totally anonymous, non-discriminatory, transparent, efficient and safe. Trading on the Day Ahead auction will produce a Base Day Index, which will be used to settle other power contracts further out along the curve.

After 11:00 the day-ahead markets are effectively closed. If the positions have not been closed out via the auction or OTC then they are left for intraday balancing. These positions are normally given to the 24 hour shift team to trade. Following the results of the auctions, schedules are created and sent to the respective Transmissions/Market Grid operators for day-ahead deliveries.

4. Afternoon actions

From 12:00 to 15:00 a period of schedule matching takes place. This is where counterparties make sure that their schedules align with those of their counterparties, and grid confirms the following

day's positions. The forward markets tend to be quieter at this time of day. But after 14:00 the markets pick up again as there would have been a reforecast of both demand and supply provided to the traders. Let's not forget that there is a continuous feed of real time data available to the trader, allowing them to continue to trade balance of week/weekend/next week/ month ahead and so on.

An ongoing task is the constant recalculation and analysis of the trader's position. This data will be received via data capture systems and connected to analytical tools to give them the most up to date information. Discussions with sales teams and direct contact with clients will be happening all through the day to identify and execute trading strategies.

Credit is always a major consideration and there are real time assessments of credit lines held against all counterparties. Each counterparty has pre agreed credit limits in place. If the sales to certain counterparty exceed internal or external limits then the trader will need to alert the brokers that they can no longer accept transactions against that counterparty. Also collateral against the exchange is continually monitored and increased/decreased if necessary.

If the trader holds positions in different markets there may be a currency exposure that needs to also be managed. Traders need to look at their forward cash exposure and hedge any GBP/EUR/USD according to the companies accounting practices.

Gas and power markets tend to dry up around 16:30 and this gives the operations teams the chance to undertake trade booking reconciliations with brokers and exchanges. At the end of the day the trader will usually have the complete log of his trades run a position checkout list and the submission of a daily PnL (Profit and Loss) to the finance department.

Around 17:30 the operations/shift teams will take over to complete the daily schedule confirmations and undertake any out of hours trading responsibilities (either deliberate intraday actions or due to unforeseen circumstances such as plant trips, interconnector failures or a change in weather patterns.

5. Wrap-up

Being a trader can be a very rewarding job, emotionally and financially, but you have to keep at the top of your game, because the markets can move against you very quickly, and that can be very painful, emotionally and financially!

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Energy and Value Letter

Energy as Key Factor in Explaining Future Growth In Emerging and Developed Markets

Erik L. van Dijk[2]

LMG Emerge, Zeist ,The Netherlands
e-mail: lodewijk.meijer.group@gmail.com

Abstract

In the upcoming 10-20 years (lack of) energy will become a central factor in economic and financial analyses of countries. Energy rich countries will be able to translate this resource into improved wealth, but energy-poor countries may find themselves confronted with serious risks. On the long run, renewable and nuclear energy together with technological innovation might mitigate things though.

1. Introduction

Up until the 1990s emerging markets as a group did *not* outperform developed markets. True, there were great periods for individual countries but sooner or later negative surprises – in combination with excess volatility – would cause disappointments for investors. And that held not just for portfolio investments, but also for foreign direct investments. Yet, since the beginning of this century things seem to be different with the BRIC nations (Brazil, Russia, India and China) developing into global growth catalysts. This has also positively affected growth in other emerging and frontier nations.

When looking at the availability of production factors within developed and emerging countries we can detect a pattern that makes it understandable that things are 'different this time' and that emerging market growth is a structural phenomenon now. Chart 1 shows how a deterioration of *relative* production factor availability in developed nations (DEV) went hand-in-hand with improvements in the emerging world (EM).

Chart 1: Global Availability of Production Factors until (Before) and since (Now) 2000

[2] The author is principal at LMG Emerge, a Netherlands-based institutional investment consultant. LMG advises pension plans and other institutional investors on their Emerging Markets and Energy investments.

The main scarcities are now to be found in developed nations. As we will show in the remainder of this contribution, changes in supply-demand patterns and reserve positions within primary energy markets are key when it comes to the analysis of *future trends* within emerging countries on the one hand and the *differential development* between emerging and developed nations on the other.

2. A New Balance of Power in International Capital Markets

Developments in financial markets are lagging when it comes to the embracement of the 'Changing World' concept. True, institutional and private investors are now investing far more in emerging countries than they did before, but allocations to emerging markets do normally reach 5-15% of the overall portfolio. When we compare that to the global GDP-based weight of these countries – about 35-40% – there is still a long way to go before the underweight's to fast-growing emerging markets have been washed away. Although beyond the scope of this contribution, it is not totally coincidental that the last 10 years were one of the worst decades in terms of investor performance, since the information above suggests a dramatic underweight to markets with the best growth record and potential!

Until recently investors could defend themselves by referring to the shaky financial positions of emerging countries. Financial crises in Latin America and Asia showed that in a dramatic way. And political risks are also a major factor (e.g. refer to Middle East). But when looking at the financial situation things have totally changed. Twelve of the 20 richest countries in the world when it comes to gold and foreign currency reserves are now emerging markets! Of course, it is not only about gold and currency reserves, but when we add external debt to the equation the overall picture is more than confirmed: all top-20 debtor nations in the world are 'developed'! Emerging countries as a group do now have far lower External Debt / GDP ratios and have faster growing economies (5-10% per annum versus 1-4% for developed nations).[3]

3. International Money Flows: What to Expect?

With institutional investors now adjusting their strategic investment policies to the new reality of a 'Changing World' in which emerging nations are here to stay, longer-term money flows are reasonably predictable: from developed countries into emerging ones. But in a globalized world in which market liquidity of emerging markets has gone up and transaction costs have come down while volatility remains relatively high, tactical withdrawals and re-entries will ensure a confusing short-term pattern.

But there is more. Whereas big institutional investors from developed nations still dominate global financial markets with total assets under management (AUM) of approximately USD 15 trillion[4], *Sovereign Wealth Funds* (SWFs) are of growing importance. As of December 2010 their combined wealth has grown to USD 4,157 billion[5], less than 25% of the combined wealth of pension plans but of growing importance due to faster growth. Asian and Middle Eastern emerging countries dominate the SWF investment pool as Chart 2 illustrates (see next page).

When digging deeper, we can derive that about 60% of SWF wealth is oil- and/or gas-related, with excess economic growth (China, Singapore, Korea) playing an important role within the remaining 40 percent. And when looking at tensions in the Middle East – and their impact on global energy prices – on the one hand and Western nervousness when big Middle Eastern investors (SWF or private) want to invest within their countries on the other, it is clear that the energy sector will play an important role over the next 10 years if we want to explain not just financial market return and risk prospects but also geopolitical trends and risks.

[3] Data based on LMG Emerge database and CIA Factbook 2010.
[4] Data based on LMG Emerge database and OECD figures
[5] Sovereign Wealth Fund Institute, 2011

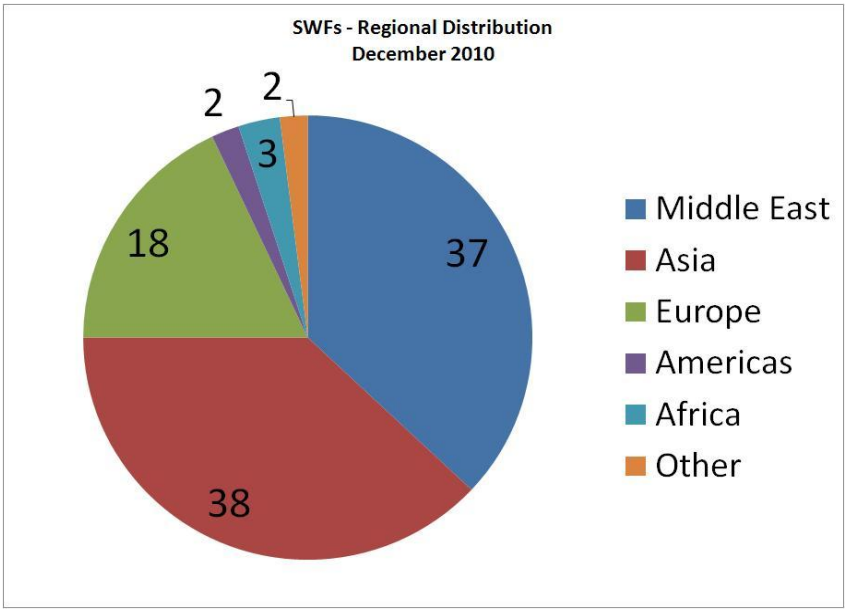

Chart 2: Wealth of Sovereign Wealth Funds as of Dec 2010 – Regional Distribution

4. The Pivotal Role of the Energy Sector

Chart 3 tells us that traditional fossil fuels – oil, gas and coal – are still playing a dominant role within our global energy consumption. Interest in renewable energy is growing, but at a speed that cannot in the near future reduce the tensions within markets for fossil fuels. Moreover, this will automatically translate into expected price increases that will benefit producer nations and hurt consumers.

	Percentage of Consumption					
Primary Energy Source	Average	Min	Min Region	Max	Max Region	Comments
Oil	34.7%	29.1%	Asia Pacific	51.0%	Middle East	Dominant Position ME, Russia
Gas	23.8%	10.8%	Asia Pacific	47.2%	Middle East	Dominant Position ME, Russia
Coal	29.4%	1.4%	Middle East	51.9%	Asia Pacific	Downward Pressure due to Environmentalists
Nuclear Energy	5.5%	0.0%	Middle East, Africa	9.6%	Europe & Eurasia	Best growth option, but impopular in most countries
Hydro Energy	6.6%	0.4%	Middle East	28.1%	South & Central America	
TOTAL	100.0%					
Renewable Energy						
Geothermal			Still			Certain Growth
Solar			of			but:
Wind			Marginal			At What Speed?
Ethanol/Bio			Importance			

Sources: LMG Emerge and BP Statistical Review (2010)

Chart 3: Global Consumption of Primary Energy Sources

When comparing consumption with production and reserve developments the situation is *seemingly* not so bad. Consumption growth was slightly higher than production growth, but this was compensated by an increase in reserves. And growth rates of both consumption and production went down tremendously during the period 1989-2009 when comparing it with 1969-1988. But the *real problem* for the next 20 years is that so far the bulk of growth was eaten away by 'just' the developed nations. Now, as a result of growth in emerging markets new reserves and gains due to increased energy efficiency will by no means be sufficient to capture future global consumption growth. This will result in price increases for oil, gas and coal. Price increases will of course make new exploration profitable, but it will not be enough. Not the least, because there are also environmental pressures that work against increased exploration of new oil and coal fields (especially in developed nations).

This will translate into increased focus on renewable energy, but will it be enough? The answer is most likely: No. Especially now that there are huge setbacks due to the March 2011 nuclear drama in Japan, with nuclear energy being the only primary energy source with sufficient shorter-term potential to help offset supply-demand imbalances for the three traditional fossil fuels in a meaningful manner. And that will make a country's sensitivity to energy risk one of the most important themes of the next 10-20 years when analyzing its economic and investment potential.

5. Macro Sensitivities to Energy Risk Factors

Oil prices of USD 100 or more per barrel are therefore here to stay. Although in a somewhat less volatile way, prices of gas have followed oil price trends, so consumer nations do not really gain much by trying to move from one fossil fuel to the next. Coal might be an option, but this is exactly the primary energy source that is confronted with the largest environmentalist lobby in the developed world. Within emerging countries we do however see a growing interest in coal consumption and production.

Using the *BP Statistical Review (2010)* we ranked the top-50 nations in terms of consumption, production and reserve positions in. Using a data set containing the situation in 1989, 1999 and 2009 we are also able to see trends. The larger the production and reserve position compared to its consumption, the better-off a nation is. Large consumption without sufficient internal production and reserves would translate into dependence on energy imports and that will be a big risk in a future characterized by rising prices for the main primary energy sources.

In Chart 4, we translated this into a quintile classification[6], with the lowest scores ending up in the first quintile ('Energy Winners') and the highest in fifth quintile ('Energy Losers').

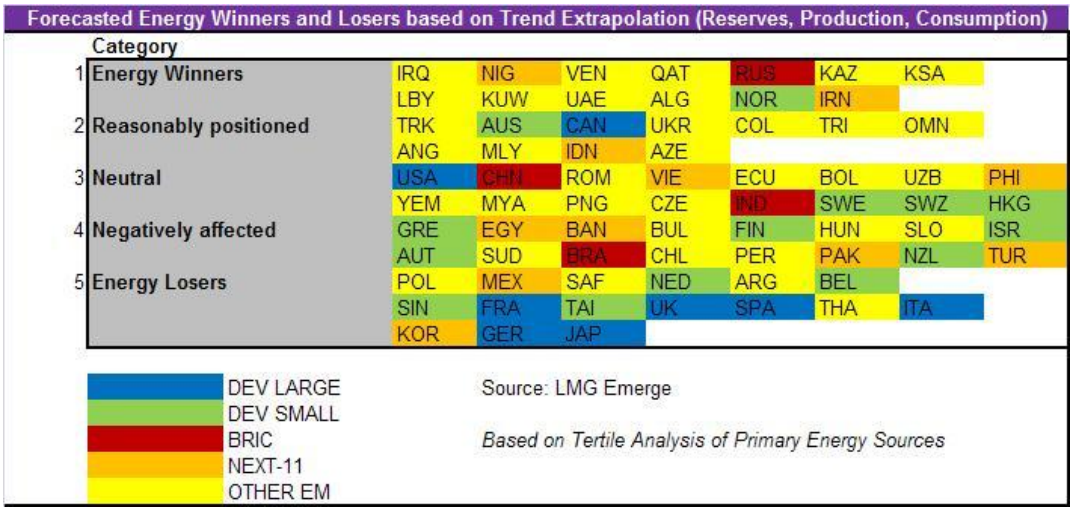

Chart 4: Energy Winners versus Energy Losers: Ranking Analysis using 1989-2009 data

Some interesting conclusions can be drawn from the chart, especially when taking into account expected price developments of fossil fuels and the current financial and economic positions of the various countries. First of all, it is clear that sometimes heard suggestions that Russia should be removed from the BRIC group do totally forget the energy situation. If anything, we will have to worry first about Brazil – a favorite of many Emerging Markets asset managers – when it comes to longer-term prospects.

[6] The reader is invited to contact LMG at info@lmg-emerge.com for more information about the details of the ranking exercise.

Chart 4 also indicates that developed nations in Europe and Japan are most endangered as far as their energy position is concerned. On average we can say that energy risk is far less of a problem for emerging nations as a *group* than it is for developed nations. However, energy-poor emerging countries without a diversified economy to cope with expected energy price disappointments are a clear exception. Their only chance is diversification into an export-oriented focus on industries consuming relatively low amounts of energy and the use of cheap labor, but that is easier said than done.

5. Evaluation

Energy positions of countries will play a pivotal role in explaining their future growth potential. This is especially true for emerging and frontier markets. The energy-rich countries within this group will be able to translate this resource into improved wealth. And this implies that the world will have to accept a new geopolitical order in which investors from these nations will now acquire strategic interests in firms domiciled in developed nations at a far larger scale than we are used to (or willing to accept) nowadays.

A continued quest for increased energy efficiency and a focus on sectors and industries that consume less energy will be an important point on the strategic agenda of many developed and emerging nations. It is good to know that over the period 1969-2009 improved energy efficiency did indeed help avoid huge demand-supply imbalances, but the next four decades will be 'another ball game' because growing energy consumption in emerging countries that benefit from above-average economic growth and wealth increases will translate into increased pressure on demand-supply situations.

Energy-poor countries – especially in emerging markets – can be considered the ones faced with serious risks. They will need to specialize in directions that help them cope with their poor resource positions. One way to do that could be to provide services to energy-rich nations. The growth track record of energy-poor Turkey over the last decade is a nice illustration of an – until now – reasonably successful effort to do so. Turkey focuses on playing an intermediary position between energy producers Russia, Ukraine, Azerbaijan, Kazakhstan and Iran on the one hand and the large European market on the other.

Renewable and nuclear energy in combination with technological innovation might mitigate things in the longer run. However, we have to incorporate that the Japan catastrophe will translate into setbacks for nuclear energy. And we should also be realistic about renewable energy: growth from a low base level takes a long time of high growth before it becomes visible in overall energy production and consumption figures.