General Considerations Regarding the Reserves and Consumption of Energetic Resources

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Abstract: The knowledge of the processes of economic and social development ensues without a doubt the study and understanding of the market mechanisms, of the market in general, in all the functions it has been known to play throughout the history in the life of peoples, but especially in that of mechanism which manages the adjustment and auto-adjustment of the economic processes. Generally speaking, the market is perceived as a meeting place, more or less abstract, where the offer of the sellers and the customers' demand meet. The first being the manifestation form of the production in the conditions of the exchange economy, the second expressing the solvent human needs accompanied by the people's capacity to buy the offered merchandise, if convenient.

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JEL Classification: Q00; Q51; Q57

1. Introduction

On the market there are numerous interwoven economic flows, the first one being the raw materials and energy flow, and then the merchandise and services flow. "The market- affirms M. Didier- is constructed as an ensemble of means of communication through which the sellers and buyers transmit information to each

other regarding what their needs are, what prices they charge or propose in order for the transaction between them to be concluded".

In normal conditions, the market cannot exist in the absence of competition, which actually represents its essential characteristic. Competition means confrontation, the economic rivalry between those taking part in the processes of the market. The completion must be an open, loyal confrontation. Otherwise the result could be the destruction of the market, of its mechanism, the transformation of the market into something formal.

2. The Energetic Resources Market

Competition and competitive mechanisms differ from a stage to another, from a country to another, depending on various factor and conditions:

- The number and size of the sellers and buyers;
- The product's degree of specialization/differentiation;
- The market's degree of transparency;
- The mobility or steadiness of prices;
- The level of economic development;
- The actual national and international political situation;
- The economic culture of the population, of different economic factors, etc.

Taking all these conditions into consideration, every producer strives to satisfy a certain amount/volume of demand in the market. Thereby the market has become the principal economic and social mechanism used in the orientation of the economic agents and the allocation of the resources in the development process.

A special type of market is the natural resources market. Its study implies a more thorough analysis based on the following factors:

- The requirements of the economic growth;
- The future potential offered by the environmental factors;
- The scientific and technologic progress and demographic evolution;
- The reduction rhythm of specific consumption, etc.

M. Didier asserts that "Natural factors are given by the universe: land, minerals, oil, space. Natural factors are not free of charge, they must be exploited. But their primary state of existence in which human beings are not included in any way, allows the conception of any industrial process and the implementation of all utilities; all these things would be impossible to achieve without natural resources."

The analysis of the natural resources at micro and macroeconomic level has focused especially on their deficient character and, in that sense; many methodological concepts have been connected to solving the problems of the

resources' allocation. Thereby, there exists a shortage of resources, on one hand, because of the rising demand in the offer-demand relationship on the market and, on the other hand, because of the layout in which these raw materials are distributed in the production process. Therefore, natural resources appear to be deficient because the production factors which are needed for the production processes are not available in an unlimited manner during the production process.

The deficient character of the natural resources on the market is slowly weakening in time with the economic development and technical progress which contributes to the economic growth. However, the spontaneous action of the demand and offer on the resources' market, with the target of maximizing profits, does not lead to the protection of natural resources or the avoidance of their rapid depletion. In that sense there are some aspects that need to be clarified:

- A better understanding of the relation which exists between the natural resources reserves and the production of raw materials and energy, and between the production of raw materials and energy and the economic development level of countries;
- The extension of commercial import-export relations in the field of energetic resources and raw materials needed for the balance of the intern demand;
- The use on a large scale of the alternative sources of energy;
- The need for a change in the energy base structure and the need for raw mineral materials.

In the conditions of the present pronounced development of the civilization, energetic has become a vital factor of the economy.

Energetic plays an essential role in the socio-economic development of countries, in the acceleration of the technical progress and in the civilization, determining economic specializations and diversification of human activities.

The energetic industry is a basic branch of the economy and covers exploration, exploitation and usage of energy sources.

In relation with the energetic industry's development is the development of all the other branches of an economy, and most times the energetic industry outruns the other branches.

The level of industrialization and the living standard are usually connected to the energy consumption.

As a consequence of the society's development, the production and usage of energy are rising at an alarming pace. Therefore, during the Energy World Conference from 1989 it has been concluded that until 2020 the energy consumption will rise with 75%.

The resources used in the energetic industry are both exhaustible and inexhaustible. The consumption of the exhaustible resources must be exploited and used attentively, because the opportunities offered by the earth for the future are limited.

The resources which are found at the basic level of the energetic industry can be divided into the following 2 categories:

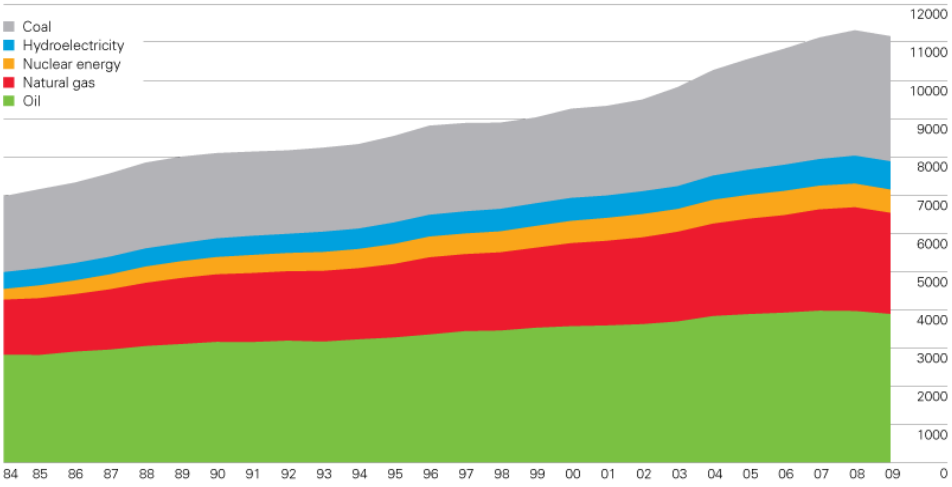
- Conventional resources – wood, coal, oil, natural gas, nuclear fuel, running water, etc.
- Unconventional resources – solar energy, geothermal energy, ocean's energy, biomass, etc.

In the energetic balance, the exhaustible resources still have an important role, some because they are the result of natural processes which happened at a geological time scale, others like wood because they are renewable. Unfortunately today's abusive rhythm of exploitation may outrun the biological rhythm of regeneration.

Changes in the world energetic equilibrium mirror the general trends of development in the energetic industry, but how these trends manifest themselves can vary from region to region, from country to country. The energetic balance of each country has its specificity, determined by the degree of economic development and the access to different energetic resources.

World consumption

Million tones oil equivalent



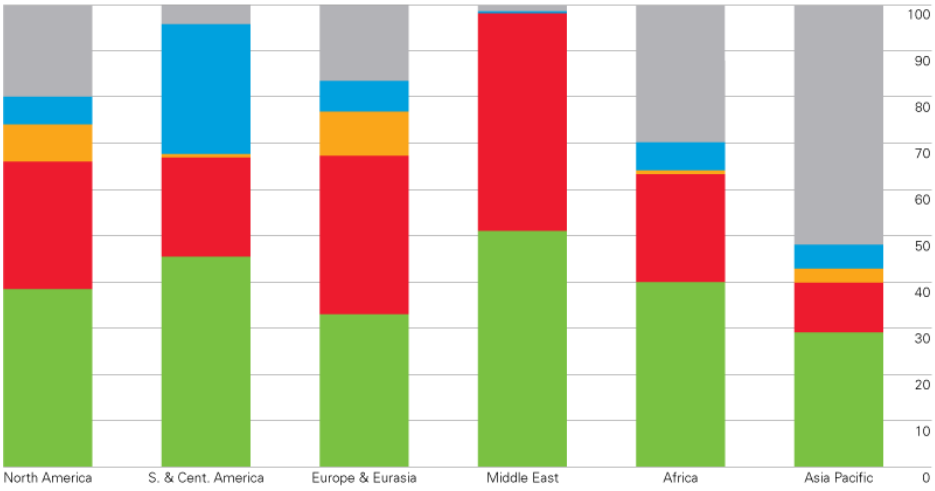
Source: BP Statistical Review of World Energy

World primary energy consumption fell by 1.1% in 2009, the first decline since 1982. Consumption was weaker than average in all regions. While oil remains the leading fuel (accounting for 34.8% of global primary energy consumption), it continues to lose market share. Coal's share of global energy consumption was the highest since 1970.

The oil crisis also triggered by the immoderate consumption of hydrocarbons determined the need for a re-analysis of the production-consumption relationship, entailed a more thorough examination of the nuclear resources, the energetic unconventional resources and the integration of these resources in as big a percentage as possible in the energetic balance.

Regional consumption pattern 2009

Percentage



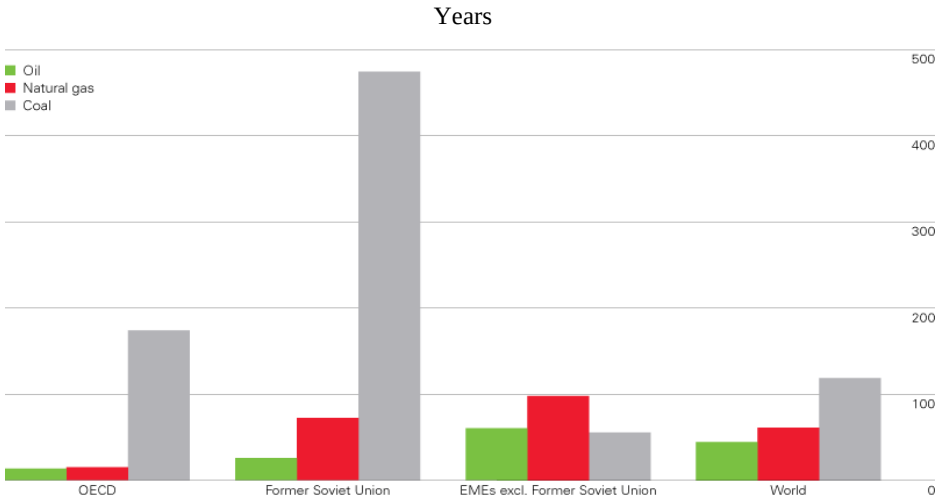
Source: BP Statistical Review

Oil remains the world's dominant fuel, although it has lost market share over the past decade- globally and in every region. Natural gas has the leading market share in Europe and Eurasia, while coal is the dominant fuel in Asia Pacific. Regionally, oil and natural gas have the highest market shares in the Middle East; coal in Asia Pacific; and nuclear and hydro in Europe and Eurasia.

This stacked column bar chart shows percentage energy type composition of global regions. The regions represented North America, South and Central America, Europe and Eurasia, Middle East, Africa and Asia Pacific, each show the prevalence of most used energy types.

Oil comprises between 29% (Asia Pacific) and 51% (Middle East) of fuel across each region with natural gas the second most used fuel with highest usage in the Middle East 48% and the lowest in the Asia Pacific with 11%. Asia Pacific has the highest consumption of coal with 52% of its consumption. South & Central America are the largest consumers of hydroelectricity with 28% and Europe & Eurasia are the largest consumers of nuclear energy with 10%.

Fossil fuel reserves-to-production (R/P) ratios at end 2009



Source: BP Statistical Review

While coal remains the world's most abundant fossil fuel, with an R/P ratio of 119 years, proved reserves of oil and natural gas increased in 2009 and have tended to rise over time. OECD countries account for less than 10% of global proved reserves for oil and natural gas, but 42.6% of proved coal reserves.

This bar chart shows fossil fuel ratios at the end of 2009 in years for the OECD, Former Soviet Union (FSU), Emerging Market Economies (EME's) exclusive of the FSU and the world. In all areas except EME's coal has the highest R/P ratio. For the OECD coal's R/P ratio is 173.7 years, gas 14.8 years, oil 13.5 years. In the FSU the coal R/P ratio is 473.5 years, gas 72.4 years and oil 26.2 years. For EME's the gas R/P ratio is 97.6 years, coal 55.9 years and oil 60.2 years. For the world, coal's R/P ratio is 119 years, gas 60.6 years and oil 44.4 years.

3. Conclusions

In conclusion, it can be stated that the market of natural resources can be characterized by:

- Limited number of producers (sellers), number that varies from one type of resource to another or because of the uneven distribution of natural resources, fact that underlines a comparative advantage in the international relationships for the countries that own energetic reserves;
- Because of the uneven natural potential of countries, the market of natural resources shows the features of a monopolistic one (or oligopolistic), with all the advantages and disadvantages this type of market can present: the establishment of the extraction rhythms, the alignment of prices, the restriction of exported quantities, etc.
- The offer in the case of natural resources is limited while the demand is greater, especially from the number of buyers' point of view.
- Depending on the level of development of each country the following situations are possible: the intern demand can be greater than the offer, in which case the import of energetic resources or raw materials is necessary; the intern demand is smaller than the offer (in the case of underdeveloped countries that have large reserves of resources), a fact that determines the export of energetic and mineral resources, etc.

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