

Oil Market as Seen from Viewpoint of Energy Economics

Ken Koyama, PhD
Chief Economist, Managing Director
The Institute of Energy Economics, Japan

On January 20, I had an opportunity to participate in a meeting on energy policy problems in Malaysia. Gathering there were Malaysian energy policy and industry officials and energy experts. Instead of giving a simple presentation, I provided a framework and topics to facilitate interactive discussions with other participants. The discussions did not necessarily deal with timely “hot” topics regarding the oil market.

Specifically, I offered four major questions to the participants-- (1) why oil problems are important, (2) what the determinants of oil demand are, (3) what the determinants of oil supply are, and (4) what the determinants of oil prices are -- and received views or ideas about these questions from some participants. Then, I solicited views or ideas from other participants for floor debate. As a result, various views were presented for vigorous debate. The key points of the discussions follow:

In response to the first question of why oil problems are important, some participants in the meeting voluntarily answered that oil accounted for the largest share of energy supply indispensable for human society. Extending this answer, some pointed out that oil was important primarily in the transport sector. They also noted that oil would remain a dominant energy source in the transport sector over the foreseeable future and that using oil at stable, reasonable prices would be indispensable for public life and economic activities.

One participant pointed out that as oil was the most frequently traded energy commodity in the world, oil prices represented the most important variable for macroeconomic problems. This would be the reason why oil price information makes “headlines” (particularly when oil prices are volatile), they said. Another participant pointed to the importance of oil for international politics, saying that oil influences the global power balance. Lastly, one participant noted that oil’s serious influences as cited above are not theoretical (academic) but real, having emerged in the past and emerging now. A conclusion was that oil’s real importance would remain in the future.

On the second question of what the determinants of oil demand are, participants cited economic growth and population as the two most important basic determinants. Some participants noted that it would be important to break down the effects of economic growth into the diffusion of energy consuming equipment through income growth, switching from traditional energy sources to oil in developing countries, the expansion of demand for oil for industrial and transportation uses accompanying vigorous economic activities and other factors.

Discussions focused on prices as a determinant of oil demand. Some participants noted that problems regarding absolute price levels such as high or low gasoline prices for consumers were as important as relative prices of energy sources competing with oil. Subsidies and tax were cited as factors influencing price levels. Policies and technologies were last cited as factors exerting influences on prices. Participants in the discussions pointed to oil substitution policies deployed in a full-fledged manner in developed countries after oil crises, advanced automobile technologies in the transport sector and other factors actually influencing oil demand. Participants agreed that these factors would be important.

Responding to the third question of what the determinants of oil supply are, participants in the meeting argued resources and reserves as basic determinants. As factors influencing the process for producing the underground resources, they cited production and development costs, crude oil prices, technology, and contract terms and conditions for detailed discussions. Some participants pointed out that although shale oil resources had not led to actual supply in the past, the diffusion of advanced technologies such as horizontal drilling and hydraulic fracturing, crude oil prices being sustained above \$100 per barrel and shale oil producer's cost reduction efforts after the oil price plunge played key roles in paving the way for shale oil production.

In addition, regulations influenced supply in the actual market, some participants said. Regarding shale oil, environmental and other regulations on hydraulic fracturing and on access to areas with shale resources were cited as important issues that could become controversial under the new U.S. administration. Finally, production adjustment policies including the recent coordinated production cut by the Organization of the Petroleum Exporting Countries and other oil producers were taken up as a variable that actually exerts great direct or indirect influences on oil supply.

As for the fourth question of what the determinants of oil prices are, participants discussed various factors regarding pricing through actual oil supply and demand and through a paper market. In the cash market, prices are fixed when a demand curve crosses a supply curve. Factors discussed in regard to the second and third questions influence or determine supply and demand curve conditions and shapes. In the actual market, European and American oil futures transactions determine crude oil prices. Participants noted that futures markets would be influenced by cash market supply and demand conditions and predictions or perceptions on them and that other economic and financial factor including stock prices and foreign exchange rates would exert great influences on futures market prices.

The meeting was designed not to analyze the present oil market or predict future developments, but to review relevant conceptual analysis for brainstorming purposes from the viewpoint of energy economics. In respect to brainstorming, some participants in the meeting concluded that it would be important to classify and differentiate the affect of the abovementioned factors into short- and long-term ones. The discussions at the meeting represented analytical brainstorming and could be applied to other various issues including electricity, renewable energy and nuclear energy markets. Such discussions and analytical reviews are very significant for enhancing skills to have better understanding of current problems.

Contact: report@tky.ieej.or.jp

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