Volatility of Oil Price and Instability of Oil Market around OPEC
: Any Lessons for Korea?

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Insatiable oil demand contributes to its price up. As oil is becoming scarcer, its price has been widely fluctuating. This study examines the mechanism of OPEC, focusing on the oil price volatility along with its critical determinants. OPEC has played its role by controlling the relative balance of power with non-OPEC nations since its inauguration. There are factors affecting the oil market instability: that is, conflicts between OPEC and non-OPEC nations, speculative behaviors, and petronationalism. Based on these factors, the study concludes with some lessons for South Korea to prepare for the post petroleum era. To this end, South Korea as an oil-consuming nation should redefine the role of OPEC not merely as an oil cartel but as an organization of group of nations with different geography as well as socio-economy. The South Korean government also requires to diversify the raw materials in domestic industry as countermeasures against unexpected oil price swing.

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I. Introduction

Oil is not merely considered as a raw material any longer. Tons of financial markets intertwined globally witness oil as the new type of derivatives similar to conventional ones such as stocks or bonds. A growing number of countries pay heed to the role of oil in both inter and intra-industries in order to take greater initiatives in their oil market. The majority of the international community, therefore, focuses more on the policy implemented by the member nations from OPEC.

Since OPEC members failed to grasp the real dimensions of the worldwide petroleum market as well as to coordinate each other, the decline of OPEC power has been accentuated as a matter of fact (Ghanem 1986, 183). Notwithstanding, several frictions have often arose between OPEC and non-OPEC nations with respect to the process of reflecting their national interests to oil policy. As oil is becoming scarcer, insatiable oil demand contributes to its price up. Oil producers attempt to control the nominal price of the crude oil, when its consumption rate exceeds the supply rate.

The study demonstrates the following. It begins by elucidating the major sources that determine the oil price with a brief history of its establishment. Much of the discussion focuses on the factors influencing the mechanism of OPEC and how OPEC membership affect each other. The second section points out the factors that deteriorate the condition of
oil market. Above all, widely fluctuating oil price clearly shows its vulnerability to incidents such as Iraq war in 2003. Besides, speculative behaviors and resource nationalism between OPEC and non-OPEC member states cause the volatility of oil price, respectively. The remaining sections present some implications of conflicts on managing oil prices and its production between OPEC and non-OPEC states. The South Korean government should prepare for unpredictable oil market in the future since it is heavily dependent its oil imports on other nations. The study concludes with lessons for South Korea considering its domestic energy demands.

II. OPEC AND OIL PRICE DETERMINANTS

1. The Establishment of OPEC and its Role

With an end to protect their own economy highly tilted on oil export, five oil-producing countries including Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela formed OPEC in 1960. The Baghdad conference was held from 10 to 14 September 1960. The conference issued a statement expressing the view that ‘any fluctuation in the price of petroleum necessarily affects the implementation of the members’ programs and results in a dislocation detrimental not only to their own economies, but also to those of all consuming nations (Ghanem 1986, 29).

OPEC founding members made an effort to struggle for their own sovereignty on oil against the power of the Seven Sisters, a term indicating
companies that dominated the oil market with a huge amount of capital.\(^1\) The control over world supply and distribution by the Seven Sisters, as they came to be known, became a classic case of a highly concentrated, oligopolistic market structure in a vertically organized industry (Abdalla 1995, 872).

In this regard, OPEC member countries put their top priority to stabilize oil markets as well as to secure economic supply of petroleum to consumers. OPEC initially tried to put an end to downward fluctuation of oil prices. An objective of OPEC is to co-ordinate and unify petroleum policies among member countries in a bid to secure fair and stable prices for petroleum producers; an efficient, economic and regular supply of petroleum to consuming nations; and a fair return on capital to those investing in the industry.

The significance of oil price rests on the fact that it crucially affects both internal economic growth and energy security. Price fluctuations determine the condition of oil market mechanism. High oil prices, for instance, inevitably discourage investors’ willingness to pay and thereby inflation emerges. On the other hand, countries usually reap the benefit of stabilizing their economies by improving balance of payments in case of low oil prices. The fall of oil price, however, does not always guarantee the potential growth of domestic economy. If the major advanced nations see sluggish economic growth, the decreased price of oil combined with the high value of dollar cannot be welcomed. Accordingly, it is crucial to

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\(^1\) 'The Seven Sisters' was a term coined by Enrico Mattei in the 1950s in a bid to describe seven dominant oil companies that substantially control the most of global oil reserves in the international oil industry. They are Anglo-Persian Company, Gulf oil, Standard Oil Company of New York, Texaco, Royal Dutch Shell, Standard Oil of New Jersey, Standard Oil of California.
understand the process of determining oil price.

Much of the scholarly outputs on the oil supply focus on OPEC’s structure as a cartel. There are various types of cartels that illustrate the mechanism of OPEC. Some suggest that OPEC should be perceived as a bureaucratic cartel composed of a collusive syndicate of producers considering transaction costs when they operate (Smith 2005, 20). Others refer to OPEC as a clumsy cartel since member nations therein do not always harmonize their own national interests compatible to collective ones, and thereby they hardly reach on the best agreement (Adelman 1980). Aside from these discussions, however, OPEC per se cannot be simply defined as a cartel, for oil price setter is not confined to OPEC membership.

2. Oil Price Determinants

The market price of commodity is bound to be determined by the principle of supply and demand. Some unpredictable situations trigger by market emergency or different tastes of investors. Before proceeding, it is necessary to identify who set the oil price. There are three major classes of actors in the international oil market: OPEC members, non-OPEC oil producers, and oil-consuming nations (Heal et al. 1991, 52). All of three actors get involved in setting the oil price despite asymmetrically. Given this, OPEC per se played its role not by monopoly in setting oil price. Then, this study indicates oil price determinants as follows.

Above all, one of the central focus of this study lies in OPEC one of the most influential actors at supply side. OPEC’s pricing mechanism has so
far managed both the price and the quantity at the same time. The system involves the setting of price targets and output ceilings in order to stabilize revenues (Hammoudeh et al, 1992, 66). The price of oil is referred to as OPEC’s terms of trade, the ratio between the prices of oil relative to the prices of OPEC’s imports. In other words, the terms of trade are a ratio: OPEC plays a role in setting the numerator, but the denominator is determined in the nations with whom OPEC’s members trade (Heal et al, 1991, 40).

Furthermore, the development of oil price also requires other factors such as fundamental but burgeoning market factors. There are categorized four explanatory factors: fast-growing demand due to high global economic growth; declining supply or anticipated shortages in supply; coordinated action on the part of crude oil producers; and the behavior of financial market participants, speculation (Breitenfellner 2009, 113).

III. FACTORS AFFECTING THE OIL PRICE INSTABILITY

The volatility of oil price generates counter-effects by creating market uncertainty. An excessively high price would generally provide conditions where there is a potential for inflation and economic recession, while as a consequence of reduced demand and oversupply, along with relatively more elastic demand, the oil price would then drop (Yang et al, 2002, 117). The low price of oil, however, does not always guarantee the economic growth, albeit its stability. There is no doubt the fact that a wide range of changing oil price exacerbates the stability of market system in the long
term, a widely fluctuating oil price is shown below at table 1. Given the character of crude oil price as a non-stationary one, there needs to analyze some points which actually affect the oil price volatility as follows,

Table 1. Global Oil Price (WITI): (2003.1~2013.9)

1. Conflicts between OPEC and non–OPEC

Since OPEC was formed in 1960, there have been several frictions between OPEC member nations and non-OPEC ones if the oil market is disrupted by either a price swing or a quantity limit on oil. Over the past three decades, oil prices have jumped sharply on four occasions: (1) in 1973, after the first OPEC embargo; (2) in 1979, after the Iranian revolution; (3) in 1990, after Iraq’s invasion of Kuwait; (4) and in 1999-2000 as the world economy boomed and OPEC cut its production.

Each time the oil price at least tripled, contributing to a global recession.

One of the recent examples is a war on Iraq in 2003, the 21st century’ s
first and ultimate oil war. Even though the war broke out on the pretext of removing WMD program in Iraq, it is self-evident that the main culprit of Iraq war is a competition to exert a strong influence on oil markets in the Middle East. Since the end of the war, the oil price still remains high. Several major OPEC member nations have been criticized for their self-seeking behaviors.

In a similar vein, non-OPEC countries, particularly some giant world economies, have been notorious for its self-centered interventions. Concerning the price of oil produced in the Middle East, this oil organization has long been blamed for being a collusion in that the OPEC-led price setters themselves hinder the market mechanism. Nevertheless, the volatility of oil price in the 21st century so far has its origin in the Iraq war to some degree. Had the war not taken place, the oil prices could have been expected to settle around 40 to 50 dollars per barrel range even with growing demand from China, India and other Asia Pacific countries (Salameh 2009, 56).

Oil-producing members of OPEC have denounced the advanced western nations’ sanction on their oil business. For instance, Iran, the second largest oil-producing nation among OPEC members, has decried the U.S.’s sanction on Iran’ s oil export since intervention inevitably pushed the oil market to adjust the managed level. OPEC Secretary General, Abdalla Salem el-Badri commented that geopolitics is a good instrument for speculation and hedging. In other words, market turbulence is related to geopolitical power dynamics among worldwide nations.
2. Speculative Behaviors

It is unarguably believed that the speculative behaviors hamper the principle of market called invisible hand by Adam Smith and thereby oil price has no choice but to stay the point that fails to maximize the gross social benefit. For example, a period between 2004 and 2008 witnessed the rise of oil price and its subsequent decline due to speculative forces (Juvenal et al., 2011, 25-26).

Moreover, market transparency is influenced by the variables of speculations. There is, of course, unavoidable uncertainty about oil price and its determinants: supply and demand. Amid market uncertainty, however, people would unsure about the exact value of the long-run price elasticity of demand, about how much adjustment to the two major price increases has already occurred, and about the effects on demand of changes in GNP growth rates (Gately 1984, 1105).

By calling on Congress to six-fold increase the money spent on surveillance in order for staff members of the Commodity Futures Trading Commissions (CFTC) to deter oil market manipulation, the U.S. president Barak Obama outlined a proposal to curb speculative streams in oil market. The president’s 52 million dollars plan would let regulators force energy traders to put more of their own money into trades and boost the penalties on manipulators who are found to be speculating unlawfully.

3. Petronationalism

Petronationalism is jointly created from the word petroleum and nationalism. Since economic well-being of a nation state heavily depends
on stable energy supplies, it is of great significance that a secure supply of crude oil at affordable price. Petronationalism also indicates the state’s intervention policy on oil resources similar to resource nationalism.

As a matter of fact, most of countries have expanded their interventions on natural resources on the pretext of protecting resource sovereignty since the Iranian government transformed its private oil companies into state-owned enterprises in the 1950s. Provided that one nation state props up the policy to expand its intervention, the competition among nations would become more complex. Most of adjacent nations witness stiff competition on their natural resources with the massive increase in resource nationalism.

Likewise, a variety of national interests based on the resource nationalism would be the background of conflicts on oil on the globe. There is a study on oil companies in the Middle East on the basis of resource nationalism cycle by assuming that the cycle composed of limiting the operations of private international oil companies and asserting a greater national control over natural resource development (Stevens 2008, 5).

IV. LESSONS FOR SOUTH KOREA

Since the oil market was often swayed by political turmoil in the Middle East such as Syrian civil war, the unrest has spread across the oil-related industries particularly in oil depletion economies. As a major oil exporting country to South Korea, hence, unpredictable movements of OPEC require a continuous monitoring.
Looking back on the past experiences on getting through oil shock happened twice in 1970s, salutary lessons for South Korea are necessary. South Korea has continuously witnessed its surge in oil import both in terms of import volume and its cost, as shown in the table 2,

<table>
<thead>
<tr>
<th>Year</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import Volume</td>
<td>835</td>
<td>872</td>
<td>927</td>
<td>947</td>
</tr>
<tr>
<td>Import Cost</td>
<td>50,735</td>
<td>68,684</td>
<td>100,076</td>
<td>106,859</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month</td>
<td>Jan, Feb, Mar, Apr, May, June</td>
</tr>
<tr>
<td>Import Volume</td>
<td>82</td>
</tr>
<tr>
<td>Import Cost</td>
<td>9,039</td>
</tr>
</tbody>
</table>

Source: partly from the STATE E- Index

Against this backdrop, the essence of OPEC should be redefined. There is no doubt that OPEC is initially institutionalized as an oil cartel. This cartel, however, has remained deadlocked under the international pressure to raise the oil production. The evolution of OPEC is said to be one of moderation or even conciliation, towards the OECD consumer nations, even though it is a matter of debate whether that moderation is led by the nature of the organization or by overbearing influence of Saudi Arabia or by the difficulties of establishing coherent policy from OPEC members with divergent geographies and sociologies (Shelley 2005, 128).

In lieu of simply a cartel by monopoly, OPEC should be understood as a complex international commodity organization. As noted previously, the oil price has hardly been set by unitary actor. Both oil-consuming and producing countries regardless of OPEC membership get involved all along
in determining the oil price. As the oil price per se becomes vulnerable to geopolitical risk, whether one agrees or disagrees, one thing is clear: oil price around OPEC is getting fluctuated widely.

Besides, there emerges a country like the U.S, that is projected to be self-sufficient in energy by 2035 according to an analysis by the International Energy Agency (IEA). In that case, the world’s energy map would be redrawn. As one of the biggest economies, the U.S, has the competitive edge in the initial price, South Korea should establish its oil strategy in protecting its basic industries such as chemical energy. At the same time, it is necessary for the South Korean government to make opportune provisions against unpredictable oil market in order to slake the growing thirst for stable energy supplies especially crude oil.

To put it differently, the South Korean government should come up with measures to duly prepare for the post petroleum era. Concerning the new era, previous studies have hardly provided the exact use-up date of world oil reserves, but oil is doomed to disappear for sure. For instance, the fundamental energy policy should concentrate more on boosting the development of alternative energy resources. In lieu of glossing over the sporadic oil price strike, the South Korean government ought to establish a long-term plan beforehand.

To this end, technical advances for diversification of raw materials should lead to the actual use. It is also required to classify the whole domestic industry in an order of vulnerability of oil price swing. How to cope with the volatility of oil price depends on circumstances of each industry. Countermeasures against instability of oil market Then, what effect would that have?

The overall condition of energy market would become diversified. That
brings a wide range of available sources that substitute with the crude oil. In an effort to encourage self-reliance, a marked improvement on current imbalances between the import and export of oil would ensue.

V. CONCLUSION

This study covers the mechanism of OPEC, which was formally inaugurated in 1960, focusing on the oil price volatility along with its critical determinants. As a response to the price fluctuations mainly caused by political turmoil, this organization composed of oil-producing countries played its role by controlling the relative balance of power with non-OPEC countries.

Both the case of Iraq war and sanctions on Iran’s oil export fully reflect the conflict between OPEC member nations and non-OPEC ones. In particular, political turmoil in the Middle East, a large group of oil-producing nations, substantially influenced the oil price swing. Under the purpose of representing the national interests, both oil consuming and producing countries even struggle for their incompatible profits. In this regard, OPEC members shall establish a coordination in oil supply, considering the needs of the rest of the world. Assuming such a cooperation, the mitigation of oil price instability is to be guaranteed to some degree.

The South Korean government should come up with opportune measures in order to prepare for the post petroleum era. With spurring development of alternative resources and making advances in previous natural resources
at the same time, the South Korean government by no means needs to diversify its oil import market. To this end, the essence of OPEC should be redefined not as a mere oil cartel but as an international organization of countries. As the principal aim of OPEC has slightly changed so far, South Korea requires to make all sorts of preparations against its oil imports.

[Key Word: OPEC, Oil Market Instability, Oil Price Determinants]
REFERENCES


