



Iva Brkic

# Oil and Gas Supply Security Policy in China and Japan

## Topic and Research Question

Asia has become a major driver in world energy markets, largely due to China's remarkable growth in energy demand. As the gap between energy demand and supply levels in Asia increases, the region's economic powers are becoming more eager to secure stable and reliable supply of energy. Moreover, they are concerned that potential diminishing supplies and price increases may constrain their economic growth and negatively influence the stability of the region.

Bearing in mind the importance of energy supply as a factor influencing both economic and political relations in East Asia, the master thesis focuses on the oil&gas supply security policy in China and Japan. Oil&gas are considered as strategic commodities since they are essential for core functions of any economy and country's national defense. Therefore, this thesis in particular focuses on oil&gas and presents a comparative analysis of two different approaches in oil&gas supply security policy-making in China and Japan. The reason why this paper focuses on China and Japan is straightforward. China and Japan are two largest Asian economies with different economic systems and thus have different approaches in policy-making. By analyzing oil&gas supply security policy in China and Japan, the paper tries to find an answer to the research question: *what are the similarities and differences in oil&gas supply security policies in China and Japan.*

## State of the Art

Review of existing literature on energy security shows that a number of scholars have identified various strategies to enhance country's oil&gas supply security. Both qualitative (Yergin 1988, Xu 2006, Lai 2007, Vivoda 2009, Meidan et al. 2009, Andrews-Speed et al. (2002), Christie (2009)) and quantitative studies (Neff (1997), Gupta (2008), Cohen et al.(2011), Jansen et al.(2004), Kruyt et al.(2009)) on energy security policy suggest that oil&gas supply security policy could be understood as an insurance measure taken against potential risks that might occur in the oil&gas supply channel. A number of indicators have been proposed in the existing literature. However, no consensus on set of indicators has been agreed on. Moreover, from the available literature we could note that previous scholarly work on energy supply security have not discussed recent dynamics in oil&gas markets in East Asia.

## Methodology and Approach

The thesis develops methodology upon energy security concept in which core is country's ability to secure constant supplies of oil&gas, since for every country constant supply of strategic resources such as oil&gas is vital for countries' security and economic development.

The oil&gas supply security policy conceptual framework develops a number of criteria extracted from the frameworks of a number of scholars who in their research mostly dealt with the concept of energy security and specifics of oil&gas supply security policy. In order to overcome possible disruptions that might suddenly occur and thus challenge ceaseless supplies of oil&gas, a county may invest in a number of strategies to enhance country's oil&gas supply security. Those strategies include: i) domestic production, ii) imports, iii) overseas production, iv) securing strategic petroleum reserves, and v) expansion of refining capacity.

Since political, economic and social factors differ from country to country, every country has different priorities in approaching the formation and implementation of oil&gas supply security policies. The methodology developed helps us to assess similarities and differences between oil&gas supply security policies in China and Japan.

Criteria for Classifying Oil&Gas Supply Security Policy	Indicators that support Criteria for Classify Oil&Gas Supply Security Policy
Domestic Production as a Strategy behind Oil&Gas Supply Security Policy	<ul style="list-style-type: none"> <li>Ownership (state-ownership vs. private-ownership)</li> <li>Prices (regulated vs. liberalized)</li> <li>Market Concentration (level of competition in domestic oil&amp;gas production)</li> <li>Domestic oil and gas production cover</li> </ul>
Imports as a Strategy behind Oil&Gas Supply Security Policy	<ul style="list-style-type: none"> <li>Index of oil&amp;gas import dependency in the energy mix</li> <li>Geographical diversification of supply (geostrategic vs. market approach)</li> <li>Foreign policy towards oil&amp;gas exporters (oil diplomacy)</li> </ul>
Overseas Production as a Strategy behind Oil&Gas Supply Security Policy	<ul style="list-style-type: none"> <li>Incentive structure behind 'going out' policy</li> <li>Geographic diversification of overseas production (geostrategic vs. market approach)</li> <li>Foreign policy towards countries where invested into (oil diplomacy)</li> </ul>
Securing Strategic Reserves as a Strategy behind Oil&Gas Supply Security Policy	<ul style="list-style-type: none"> <li>Ownership (state-held vs. commercially-held)</li> <li>Infrastructure (development of SPR network)</li> <li>Transparency (overall level of stock known vs. unknown)</li> </ul>
Expansion of Refining Capacity as a Strategy behind Oil&Gas Supply Security Policy	<ul style="list-style-type: none"> <li>Ownership (state-ownership vs. private-ownership)</li> <li>Prices (regulated vs. liberalized)</li> <li>Market Concentration (level of competition in domestic refining production)</li> <li>Domestic refining production cover</li> </ul>

Source: created by the author based on the literature of a number of scholars presented above

## Main Facts

Firstly, both China and Japan's domestic production levels cannot satisfy their economies' needs. The differences are observed in the structure of their oil&gas sectors. While in Japan market mechanisms steer energy sector, in China, on the contrary, the oil&gas prices are still to a certain extent regulated, and state-ownership dominates China's oil&gas industry.

Secondly, two countries have different approaches towards diversification of oil&gas imports. China as a relative latecomer to international oil&gas global energy markets focuses on diversification of oil&gas suppliers and routes by which oil&gas is traded. In Beijing's tactics we observe a geostrategic approach that stresses the importance of long-term strategic relationship with key energy exporters. In Japan, by contrast, market approach led and decentralized decision-making resulted in relatively modest geographic diversification.

Thirdly, in both China and Japan the state subsidizes overseas activities of their domestic oil&gas companies. Interestingly countries target different regions for their investments. Chinese NOCs implement geostrategic approach oriented towards 'emerging' energy exporters. Japanese oil&gas companies, due to price and availability concerns are reluctant to enter new 'rouge' countries. This resulted in Japan's lower level of diversification of overseas production relative to China.

Fourthly, both countries emphasize the relevance of domestic SPR system. Japan, as an OECD country, holds already developed and well-functioning SPR system. The SPR capacity levels are known, transparent and proportionately divided between the state and private sector, which implies that the country advocates increasing interdependence in times of globalization calling for increasing mutual trust and cooperation. In China, on the contrary, the construction of domestic SPR system is still an on-going project. China's SPRs are exclusively state-held and capacity levels are not reported. This further indicates an increasing political impediment in the region and rising focus on country's energy independence.

Lastly, with regard to expansion of refining capacity we observe a number of differences in two countries. In China, refining actors are state-owned, while in Japan they are privately-owned. Also, while in China the prices for petroleum products are regulated, whereas in Japan, they are fully liberalized. Furthermore, in China the refining market is highly concentrated, whereas, in Japan it is decentralized and divided among a number of small and medium-sized refineries.

## Results

The analysis in this paper discusses the importance of oil&gas supply security as a factor influencing both economic and political realities in China and Japan. China and Japan are two largest Asian economies with different economic systems and thus different approaches to oil&gas supply security policymaking. The analysis in this thesis has proven that the nature of decision-making structure shapes differences and similarities in oil&gas supply security policy between China and Japan.

Centralized decision-making China	Decentralized decision-making Japan
<ul style="list-style-type: none"> <li>State-ownership</li> <li>Regulated prices</li> <li>Relatively low level of competition</li> <li>Geostrategic approach to diversification of oil&amp;gas supply</li> <li>Focus on independency in oil&amp;gas supplies</li> </ul>	<ul style="list-style-type: none"> <li>Private-ownership</li> <li>Deregulated prices</li> <li>High level of completion</li> <li>Market approach to diversification of oil&amp;gas supply</li> <li>Focus on oil&amp;gas markets interdependency</li> </ul>

We conclude that policymaking behind China's oil&gas supply security is based on centralized decision-making. This can be observed in the nature of country's strategies towards domestic production, imports, overseas oil&gas production, securing SPRs and expanding domestic refining sector. In Japan, on the contrary, deregulation policies and market forces are imbedded in its oil&gas industry. Therefore, in contrast to China where we observe centralized decision-making, in Japan, the decision-making structure is decentralized. Such an approach is also to be seen in strategies that country takes while enhancing its domestic oil&gas supply security.

Thus, on the example of such an important policy goal as oil&gas supply security, we see how the nature of decision-making (centralized/decentralized) shapes the strategies and end outcomes responsible for achieving the goal of higher oil&gas supply security.

## References

All references can be found in the full version of the MA thesis available at <http://othes.univie.ac.at/>

## About the Author

Iva Brkic holds a Bachelor degree in Economics from the Vienna University of Economics and Business Administration. This thesis is part of the MA Program on East Asian Economy and Society at the University of Vienna. Contact information:

[brkic\\_iva@yahoo.com](mailto:brkic_iva@yahoo.com)