Recent Trends in Oil Supply from Iran

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Summary

The adoption of a bill for additional sanctions against Iran by the United States on December 31 has heightened international tensions regarding Iran's nuclear development issues. Many uncertainties remain regarding future developments of the ever-unpredictable Iranian nuclear issue. This paper will compile basic literature and data regarding recent Iranian oil supply trends.

Iran's oil exports are mostly directed to China, Japan, India, Italy and Korea, which collectively represent almost 70 percent of the country's total exports. Therefore, Iran will be largely impacted by how these countries respond to the US sanctions. So far, they have considered replacing Iranian imports with oil from other Gulf countries such as Saudi Arabia and requesting the US waivers of application of sanctions. Given the many uncertainties remaining regarding future developments and the importance of Iranian crude oil in the international oil market, countries will continue to be faced with difficult decisions to make between enhanced sanctions and maintaining a secure and stable oil supply.

Introduction

The Middle East, which was only recently swept by the Arab Spring in 2011, is now faced with new political tensions concerning Iran's nuclear development. With many uncertainties remaining regarding Iran's nuclear future, the situation continues to be as unpredictable as ever. Given this situation, this paper will compile basic literature and data regarding recent Iranian oil supply trends. First, Section 1 will briefly introduce the US's National Defense Authorization Act for fiscal year 2012, which triggered the recent tensions, and the EU's decision on sanctions against Iran. Section 2 will use recent statistical data to explain how each country has addressed the issues embracing their oil supply from Iran. Section 3 will discuss the basic facts concerning the Strait of Hormuz, the strategic importance of which has recently been reconfirmed in the current developments.

1. Outline of US and EU sanctions against Iran

1-1 US National Defense Authorization Act

There is a long history behind the conflict between Iran and the US and European nations, but the tensions over Iran's nuclear development issues have risen higher than ever before with the adoption of the US's National Defense Authorization Act for Fiscal Year 2012, which includes new economic sanctions against Iran.[1] Based on the Act, the US has been pressuring countries such as Japan and Korea which rely on Iran for large volumes of oil, to drastically decrease their oil imports from Iran, which has responded by warning that it would close the Strait of Hormuz, should the sanctions be executed. With the turn of the year, the international political situation regarding Iran has been embraced by rapidly increased tensions. Relevant clauses in the Act, which are associated with such heightened tensions, are given below[2]:

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[1] The National Defense Authorization Act has been adopted annually since 1964 for the purpose of determining the Pentagon's expenditures and revenues. The Act for this fiscal year includes provision on sanctions against the Central Bank of Iran.

[2] It should be noted that the outline provided here is a summary of the relevant clauses and is not necessarily faithful to the original legal provision.

(1) For general transactions, including those for petroleum, except as specifically provided in this subsection, beginning on the date that is 60 days after the date of the enactment of this Act, the President holds the authority to:

(A) Prohibit the opening and prohibit or impose strict conditions in maintaining in the United States a correspondent account or a payable-through account by a foreign financial institution that has conducted any significant financial transaction with the Central Bank of Iran or another Iranian financial institution designated by the Secretary of the Treasury for the imposition of sanctions pursuant to the International Emergency Economic Powers Act.

(B) Impose sanctions pursuant to the International Emergency Economic Powers Act with respect to the Central Bank of Iran.

(2) The President may not impose sanctions under paragraph (1) with respect to any person for conducting or facilitating a transaction for the sale of food, medicine, or medical devices to Iran.

(3) Except as provided in paragraph (4), sanctions imposed under paragraph (1) (A) shall apply with respect to a foreign financial institution owned or controlled by the government of a foreign country, including a central bank of a foreign country, only insofar as it engages in a financial transaction for the sale or purchase of petroleum or petroleum products to or from Iran conducted or facilitated on or after that date that is 180 days after the date of the enactment of this Act.

(4) The applicability of sanctions with respect to petroleum products are provided below:

(A) Not later than 60 days after the date of the enactment of this Act, and every 60 days thereafter, the Administrator of the Energy Information Administration, in consultation with the Secretary of the Treasury, the Secretary of State, and the Director of National Intelligence, shall submit to Congress a report on the availability and price of petroleum and petroleum products produced in countries other than Iran in the 60-day period preceding the submission of the report.

(B) Not later than 90 days after the date of the enactment of this Act, and every 180 days thereafter, the President shall make a determination, based on the reports required by subparagraph (A), of whether the price and supply of petroleum and petroleum products produced in countries other than Iran is sufficient to permit purchasers of petroleum and petroleum products from Iran to reduce significantly in volume their purchases from Iran.

(C) Except as provided in subparagraph (D), sanctions imposed under paragraph (1)(A) shall apply with respect to a financial transaction conducted by a foreign financial institution on or after the date that is 180 days after the date of the enactment of this Act for the purchase of petroleum or petroleum products from Iran if the President determines pursuant to subparagraph (B) that there is a sufficient supply of petroleum and petroleum products from countries other than Iran to permit a significant reduction in the volume of petroleum and petroleum products purchased from Iran.

(D) Sanctions imposed pursuant to paragraph (1) shall not apply with respect to a foreign financial institution if the President determines and reports to Congress, not later than 90 days after the date on which the President makes the determination required by subparagraph (B), and every

180 days thereafter, that the country with primary jurisdiction over the foreign financial institution has significantly reduced its volume of crude oil purchases from Iran during each respective period.

(5) The President may waive the imposition of sanctions under paragraph (1) for a period of not more than 120 days, and may renew that waiver for additional periods of not more than 120 days, if the President—
  (A) determines that such a waiver is in the national security interest of the United States and
  (B) submits to Congress a report providing a justification for the waiver; and that includes any concrete cooperation the President has received or expects to receive as a result of the waiver.

The provisions of the Act seem to leave room for a significant range of discretion in its application. The Act provides that sanctions are to be imposed upon careful judgment of any impacts upon the international oil market and that they shall not be applied to financial institutions in countries that have significantly reduced its volume of crude oil purchases.

However, these seemingly flexible provisions may actually be very narrowly applied. Given the requirement of a report from the President to Congress in order to waive the imposition of sanctions and the consistent hardline stance taken towards Iran by Congress, in both Houses of which the Act was adopted by an overwhelming majority; waivers are not likely to be easily granted[3].

1-2 EU decisions on sanctions against Iran

Sanctions against Iran have been tightened in the EU as well, as if to keep pace with US sanctions. The decision on sanctions made at the Foreign Affairs Council meeting on March 23, 2012 is the most recent at the time of writing (March 2012)..[4]

The document is composed of seven chapters and ten annexes, of which Chapter II (EXPORT AND IMPORT RESTRICTION) stipulate the sanctions on oil supply from Iran. Article 11 prohibits the import of crude oil and petroleum products into the Union if they originate in Iran or have been imported from Iran in clause (a) and prohibits the purchase of crude oil and petroleum products which are located in or which originated in Iran (clause (b)), the transport of crude oil or petroleum products if they originate in Iran or are being exported from Iran to any other country (clause (c)), and the provision of direct or indirect financing or financial assistance, including financial derivatives, as well as insurance and re-insurance related to the import, purchase or transport of crude oil and petroleum products of Iranian origin or that have been imported from Iran (clause (d)).

Furthermore, the succeeding Article 12 stipulates exceptions regarding the sanctions provided in Article 11. The prohibitions in Article 11 shall not apply to the execution until July 1, 2012, of contracts concluded before January 23, 2012, when basic agreement was reached on intensifying sanctions against Iran at the EU Foreign Affairs Council meeting, the execution of contracts concluded before January 23, 2012, where such a contract specifically provides that the supply of Iranian crude oil and petroleum products or the proceeds derived from their supply are for the reimbursement of outstanding amounts to persons, entities or bodies under the jurisdiction of Member States, and to the provision, until July 1, 2012, directly or indirectly, of third party liability insurance and environmental liability insurance.

Among the EU sanctions, the prohibition of the provision of insurance and reinsurance related to the transport of crude oil from Iran stipulated in clause (d) of Article 11 has posed concerns of potentially large

[3] US Secretary of State Clinton announced that Japan and ten European countries will be exempt from the application of sanction on March 30 2012. Yet this exemption is valid for only 120 days. The status of Iranian crude oil imports to these countries will be reviewed after 120 days and the extension of the exemption for another 120 days will be judged.

[4] Council Regulation (EU) No 267/2012, Official Journal of European Union, March 24, 2012

impacts on Japan's Iranian crude oil imports. Most of the oil tankers used in Japan's crude oil imports are operated by Japanese shipping companies, and the insurance for shipments made by these tankers are covered by Japanese insurance companies for cargo and hull damage and by the Japan Ship Owners' Mutual Protection & Indemnity Association (known by the name Japan P&I Club) for the third party's damage or environmental pollution. Because insurance for cargo and hull damage cannot be re-insured by European insurance companies, the coverage amount for the potential damage will be limited and thus affect the transportation volume of Iranian oil. For the insurance by P&I Club, the association is a member of a re-insurance program under an international group which consists of other similar P&I Clubs. Under the program, the Clubs collectively purchase re-insurance for damages exceeding 8 million dollars. However, because these re-insurance policies have been underwritten by European insurance companies, the recent EU embargo will deny Japan of re-insurance coverage for any losses exceeding 8 million dollars related to the Iranian crude oil and petroleum products included in the sanctions.[5] Although the prohibitions adopted on March 23 shall not apply to the provision, until July 1, 2012, directly or indirectly, of third party liability insurance and environmental liability insurance, the full application of insurance sanction will severely damage the Japan's crude oil imports, Japan, along with other countries which continue to import Iranian crude oil, intends to urge the EU to extend and expand coverage of the waivers of the sanctions.

2. Responses of major Iranian crude oil importers

This section will discuss the situation of Iranian crude oil imports in major countries and how they have responded to the circumstantial changes regarding Iran. First, an outline of Iran's crude oil exports will be provided, followed by recent trends in other countries.

2-1 Iranian crude oil and imports

2-1-1 Production status of Iranian crude oil

According to the International Energy Agency (IEA), Iran produces 3.30 million B/D of crude oil,and its oil production capacity is 3.51 million B/D as of March 2012. Iranian crude oil production and production capacity trends since 2005 are shown in Figure 1. Oil production in Iran has followed a downwards trend since 2005. There are even assumptions that existing Iranian oil fields have a production decline rate of over 10 percent because they have been producing for long periods of time. For these mature fields, oil recovery methods, which involve injecting natural gas into reservoirs, have been adopted; therefore, 9 percent of Iran's wellhead natural gas production is used for oil recovery. Iran aims to increase its production capacity to 5 million B/D by 2015. However, despite its ample oil reserves in geological terms, it is very difficult to achieve this goal, given only an increase of less than 0.5 million B/D expected from currently known new development projects[6], as well as impacts of the embargo, including difficulties in procuring the equipment required for the maintenance and enhancement of production capacity along with stagnated foreign investment (Figure 1).

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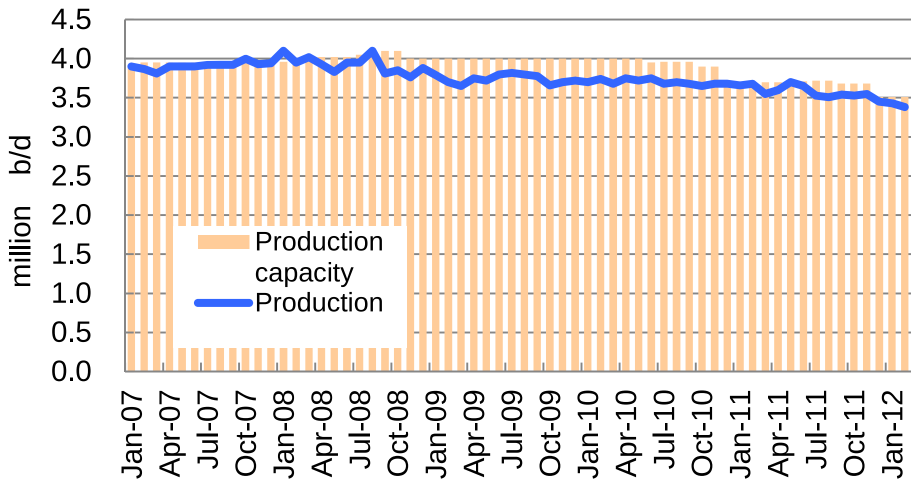
[5] "New EU sanctions on Iran: Council Decision 2012/35 – impacts on the Japan P&I Club" press release by the Japan Ship Owners' Mutual Protection & Indemnity Association, February 27, 2012

[6] OPEC website: production capacity includes crude oil only and excludes condensate. (http://www.opec.org/opec_web/static_files_project/media/downloads/data_graphs/Iran_Selected_Upstream_Projects.pdf)

Figure 1: Iranian Crude Oil Production Trends



(Source)IEA

Chart 1 presents the main types of crude oil produced in Iran, namely Iranian Light, Iranian Heavy, Sirri and Foroozan. Iranian crude oil is generally high in sulfur content and includes heavier types of oil, but are nevertheless attractive because large volumes can be procured at the same time due to its large production volumes.

Chart 1: Main Iranian Crude Oil Types

Crude oil type	Production (2010 年, 000B/D)	Sulfur content	API gravity
Azadegan	51	n/a	32.0
Doroud	65	2.90%	32.8
Foroozan	350	2.31%	30.1
Iranian Heavy	1,500	1.99%	29.5
Iranian Light	1,600	1.36%	33.4
Lavan	92	1.78%	35.2
Nouruz-Sourush	190	3.44%	18.9
Sirri	100	1.79%	33.3

(Source) International Crude Oil Market Handbook 2010 ed.

In terms of export infrastructure, Kharg Island is known as one of the world's largest seaport for exporting crude oil. It has ten oil berths, six of which are located in the eastern part of Kharg Island and are capable of accommodating VLCC (maximum 275,000 DWT). The four oil berths on the western side of the island can accommodate ULCC (maximum 500,000DWT). Two pipelines, namely, the Ahwaz/Kharg line (length: 236 km; transport capacity: 1.0 million B/D) and Gachsaran/Kharg line (length: 58km: transport capacity: 1.5 million B/D), are used to transport crude oil from oil fields in southern Iran. Much of Iranian crude oil exports go through Kharg Island.

2-1-2 Iranian crude oil exports

With oil reserves of 137 billion barrels (world's third largest reserves) and crude oil production of 4.25

million B/D (world's fourth largest production volume), Iran is one the world's largest oil producers[7]. Approximately half of the Iranian government's revenue relies on oil export income, and therefore, oil imports are literally the country's lifeline. Furthermore, Iran's presence is significant in the international oil market as well. A major OPEC member, Iran exported 2.02 million B/D of crude oil in 2011[8], most of which went to Asia. It should be emphasized that Iran, along with Saudi Arabia, the UAE and Kuwait, is an extremely important supplier of oil for Japan and other Asian countries.

Chart 2 Destinations of Iranian crude oil exports (by region)

				(Unit) Upper line: 1,000B/D, Lower line:パーセント				
	1995	2000	2005	2006	2007	2008	2009	2010
North America	2	0	0	0	0	0	0	0
	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South America	40	60	0	0	2	0	0	0
	1.5%	2.4%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
East Europe	175	110	0	0	0	0	0	0
	6.7%	4.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Western Europe	1,250	921	1,061	872	847	749	568	878
	47.7%	36.9%	44.3%	36.7%	34.4%	30.7%	25.4%	34.0%
Middle East	20	30	212	0	0	0	0	0
	0.8%	1.2%	8.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Africa	120	200	0	149	148	147	127	134
	4.6%	8.0%	0.0%	6.3%	6.0%	6.0%	5.7%	5.2%
Asia-Pacific	1,014	1,171	1,122	1,351	1,469	1,542	1,538	1,571
	38.7%	47.0%	46.8%	56.8%	59.5%	63.2%	68.9%	60.8%
Other	0	0	0	6	0	0	0	0
	0.0%	0.0%	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%
Total	2,622	2,493	2,395	2,378	2,468	2,439	2,232	2,583

(Source) OPEC

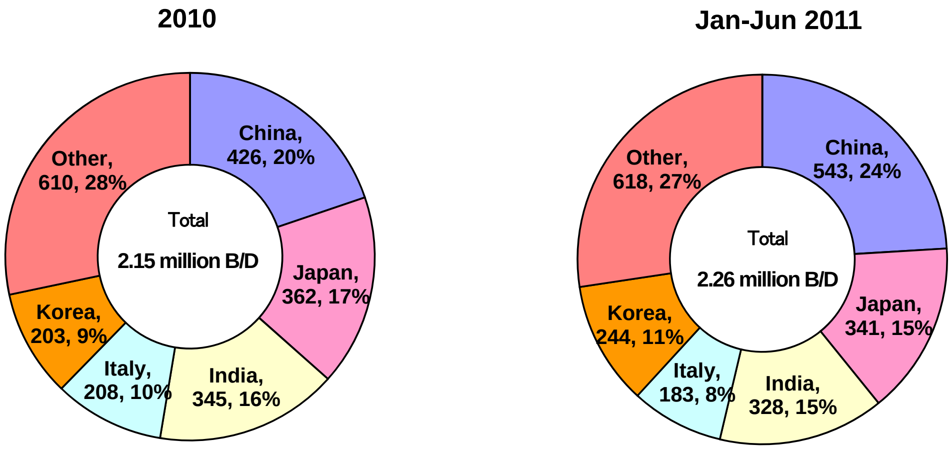
Iranian crude oil exports have maintained a stable level of over 2 million B/D since the 1990s and have reached as much as 2.6 million B/D (Chart 2). By region, Asian exports account for the largest ratio and are increasing their share in total exports (expanding from 38.7 percent in 1995 to 60.8 percent in 2010). Exports to Europe are the next largest in volume after the Asia-Pacific region, and despite a recent downwards trend, approximately one-third of crude oil exports from Iran are delivered to the European market.

China, Japan and India were the top three destinations of Iranian exports in 2010 (annually) and in the months of January through June, 2011, followed by Italy (Figure 2). Including Korea, the fifth largest importer of Iranian oil, the five countries collectively account for more that 70 percent of total exports. Therefore, the response made by these five countries to the sanctions imposed by the US and EU will have great significance upon Iran's oil export income. The sections after 2-2 will discuss the developments in these countries and others.

[7] BP Statistical Review of World Energy June 2011

[8] Average from January to October 2011, Petroleum Intelligence Weekly, January 9, 2012.

Figure 2 Top Importers of Iranian Crude Oil (2010 / Jan.-Jun. 2011)



(Note) (Unit : 1,000B/D、%)
(Source) EIA

2-2 China

2-2-1 Status of China's crude oil imports from Iran

To begin with the situation in China, in 2011, China's crude oil imports stood at 5.07 million B/D, 2.61 million B/D, or 51 percent which came from the Middle East (Chart 3). 1.01 million B/D were imported from Saudi Arabia, 0.56 million B/D from Iran, 0.37 million B/D from Oman and 0.28 million B/D from Iraq. Oil imports from Iran increased from a share of 5.5 percent in 1995 to 18.0 percent in 2001, but since then have continued to decline, marking 8.9 percent in 2010. However, Iranian imports increased once again 2011, expanding its share to 11.0 percent. China has made its payments for Iranian crude oil in Euros since 2006, when it shifted from US dollar-based payments. Chinese yuan-based payments were also considered in 2010 but have not yet been implemented.

Chart 3　China's crude oil imports（Unit：1,000B/D）

	1995	2000	2005	2006	2007	2008	2009	2010	2011
Saudi Arabia	7	115	445	479	529	730	843	896	1,010
Iran	19	141	287	337	412	428	465	428	557
Oman	73	315	218	265	275	293	234	319	365
Kuwait	0	9	33	56	73	118	142	197	192
UAE	7	9	52	61	73	92	66	106	135
Other Middle East	50	169	171	119	99	138	208	318	353
Angola	20	173	351	471	502	600	646	791	626
Sudan	0	67	133	97	207	211	245	253	261
Libya	4	3	45	68	58	64	127	148	52
Other Africa	10	98	244	283	298	208	215	231	269
Russia	0	30	257	321	292	234	307	306	371
Kazakhstan	0	15	26	54	120	114	121	202	225
Brazil	0	0	27	45	47	61	82	162	135
Venezuela	0	0	39	84	83	130	106	152	231
Other	150	270	227	175	209	171	287	297	290
Total	340	1,411	2,552	2,916	3,277	3,593	4,093	4,806	5,072
Share of imports from Iran	5.5%	10.0%	11.2%	11.6%	12.6%	11.9%	11.4%	8.9%	11.0%

(Source) Compiled from China OGP, etc.

2-2-2 Status of response from Chinese government and companies

The largest importer of Iranian crude oil, China is opposed to the economic sanctions imposed by the US. US Treasury Secretary Geithner is assumed to have asked for China's cooperation in the US sanctions against Iran in his meeting with China's Premier Wen Jiabao and Vice President Xi Jinping in Beijing on January 11. However, the state-owned Xinhua News Agency's coverage of the meeting did not include any reference to the Iranian issue, whereas the China New Services, which delivers news to people of Chinese heritage living outside China, reported that Premier Wen warned against US actions by saying that "China has always believed that issues should be resolved through dialogue rather than confrontation, and cooperation rather than sanctions." Furthermore, in a press conference held on January 11 concerning Premier Wen Jiabao's visit to Saudi Arabia, United Arab Emirates (UAE) and Qatar (January 14-19), China's deputy foreign minister Zhai Jun voiced resistance against the American request for Chinese cooperation in implementing crude oil import bans in response to Iran's suspected development of nuclear weapons, saying that he "was against their way of imposing sanctions and pressure." Foreign Ministry spokesman Liu Weimin also repeatedly emphasized in a regular news conference held on January 11 that "energy-related cooperation with Iran does not violate any UN Security Council decisions." Also, in response to the exclusion of China from the exceptions of the applicability to the National Defense Authorization Act, deputy spokesman for the Foreign Ministry Hong Lei has repeated the government's rejection of US sanctions, that China "cannot approve one country unilaterally imposing sanctions against another and pressuring third party countries to also cut on imports according to its domestic law. [9]"

Under such circumstances, the US announced on January 12 that it imposed sanctions on Zhuhai Zengrong, a Chinese state-owned oil company which is the largest buyer of Iranian oil and petroleum products in China. The state-owned company was established in 1994 by the State Council and is currently under the administration of State-owned Assets Supervision and Administration Commission (SASAC). Having been deeply involved in the oil trade relations between China and Iran, the company's term contract volume for 2011 stood at 240,000 B/D, or the largest in Iranian oil transactions. The US claims that it has imposed sanctions on the grounds that the company exported more than 0.5 billion dollars' worth of gasoline to Iran during the period from July 2010 to January 2011, but the company strongly denies such allegations. The company will no longer be able to receive loans of more than 10 billion dollars from American financial institutions, US export licenses, or loans from the Export-Import Bank of the United States. Although the sanctions themselves are believed to have little impact, new forms of pressure have been imposed upon other state-owned oil companies in China.

On the corporate side, major importers on Iranian crude oil, Zhuhai Zengrong and China Oil appear to have concluded term contracts with NIOC of 260,000 B/D and 8,000 B/D, respectively, whereas Unipec, a subsidiary of Sinopec which possesses China's largest refinery capacity, did not renew its term contract which expired in December last year. Crude oil imports from Iran have actually declined by 5 percent in January 2012 compared to the previous year. However, this is unlikely to be a consequence of US pressures but rather a result of broken-off pricing negotiations with Unipec, which has ended up signing with Iran a term contract for 2012 of volumes reduced by 15 percent compared to 2011 levels[10]. Therefore, there are higher possibilities of decreased crude oil supply from Iran to China. With its second phase target of 170 million barrels in strategic oil stockpiles and growing domestic demand, China is faced with a need to increase its crude oil imports by approximately 500,000 B/D, but is unlikely to successfully find suppliers to

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[9] The Mainichi Shimbun, March 22, 2012
[10] Bloomberg (online version), March 15, 2012

replace Iran[11]; therefore, developments in China's situation need to be carefully observed.

2-3 South Korea

2-3-1 Status of South Korea's crude oil imports from Iran

In 2011, South Korea's crude oil imports stood at 2.54 million B/D, 2.21 million B/D, or 87.0 percent, of which were of Middle East origin (Chart 4). 800,000 B/D were imported from Saudi Arabia, 260,000 B/D from Qatar, and 250,000 B/D each from Iraq and Kuwait. Iranian crude oil accounted for a 9.4 percent share of total imports.

In September 2010, the Korean government decided that it would hamstring the Korean branch of Iran's Bank Mellat. This decision suspended conventional US dollar payments and Japanese yen payments for Iranian crude oil, and instead, the Central Bank of Iran opened an account in Korea which would accept payments in Korean won from government-run Woori Bank and the Industrial Bank of Korea (IBK). However, judging from the fact that money transactions from South Korea to Iran remain difficult and that South Korea has a trade deficit with Iran, large amounts of money payable to Iran continue to accumulate in South Korea.

Chart 4 South Korea's crude oil imports by country (Unit:1,000B/D)

	1995	2000	2005	2006	2007	2008	2009	2010	2011
Saudi Arabia	622	726	683	717	685	720	698	758	796
UAE	193	351	413	435	389	433	314	289	239
Kuwait	69	183	218	254	258	287	274	282	246
Iran	187	223	194	206	235	200	223	199	239
Qatar	30	125	146	137	126	176	147	176	255
Iraq	0	49	41	42	128	113	171	164	246
Other Middle East	232	226	194	212	109	116	105	85	192
Russia	7	27	23	38	104	64	77	137	90
Australia	14	96	87	95	107	95	94	87	41
Indonesia	86	101	103	64	48	45	55	81	58
Other Middle East	273	343	208	236	202	121	129	129	137
Total	1,712	2,449	2,310	2,435	2,391	2,370	2,288	2,390	2,539
Share of imports from Iran	10.9%	9.1%	8.4%	8.4%	9.8%	8.4%	9.8%	8.3%	9.4%

(Source) compiled from material from KNOC

2-3-2 Status of response from Korean government and companies

The Korean government has taken serious note of the destabilization of the situation of international politics in relation with the Iranian issue, hence establishing a task force to monitor the impact of sanctions against Iran on January 2. When Mr. Kart Campbell, Assistant Secretary of State and Mr. Robert Einhorn, the State Department's Special Advisor for Nonproliferation and Arms Control successively visited South Korea on January 4 and 17, respectively, the Korean government requested that the US consider the special circumstances embraced by South Korea and approve an extension or exemption of the application of the National Defense Authorization Act upon Korean financial institutions. However, Special Advisor Einhorn supposedly said at the negotiation table on January 17 that collaborative steps are important in addressing Iranian issues and emphasized that the development of nuclear arms in Iran are related to nuclear developments in North Korea. North Korean diplomacy, being one of South Korea's most crucial diplomatic issues, which require enhanced and continued partnership with the US, Korea is bound to struggle over its policy regarding sanctions against Iran. South Korea was not included in the list of countries announced on

11 Financial Times(online version), March 1, 2012

March 20, 2012 to be exempt from application of the National Defense Authorization Act, and therefore negotiations with the US to waiver application are expected to become more activated as the date of the Act's enactment nears.

On the other hand, the Korean government has been considering ways to minimize the impact of reduced crude oil exports from Iran. It is focused on how to replace Iranian crude oil, which currently accounts for 10 percent of total imports, Using national stockpiles has been looked into as an option but would be a very unlikely solution, given that national stockpiles should only be used for more serious supply disruptions. Other options, such as importing crude oil from Saudi Arabia and the United Arab Emirates, are also being discussed. Korean Prime Minister Kim Hwang-Sik visited the Middle East from January 13-17 to discuss with leaders of oil producing nations the securing of crude oil supply in emergencies. The Korean government is also studying crude oil procurement via routes such as the Red Sea that do no pass through the Strait of Hormuz. However, it will undoubtedly be difficult to procure crude oil with similar quality at close prices compared with Iranian crude oil. Furthermore, with rising domestic petroleum product prices originally on the political agenda, Korea is faced with strong concerns over continually high petroleum product prices, which may be pushed up further by rising crude oil prices resulting from heightened tensions related to the sanctions.

2-4 India

2-4-1 Status of India's crude oil imports from Iran

According to data published in March 2011 by India's Ministry of Petroleum and Natural Gas, in fiscal year 2009 (April 2009 – March 2010), India imported a total of 15.93 million tons (approximately 3.2 million B/D) of crude oil, of which 21.20 million tons (approximately 430,000 B/D), or 13 percent came from Iran. Different statistics for 2010, announced by the US Energy Information Administration, say that total crude oil imports to India stood at more than 2.20 million B/D, 11 percent of which were of Iranian origin, and therefore, Iranian crude oil imports are estimated to have been approximately 240,000 B/D in 2010[12].

Chart 5 Iranian crude oil imports by company (Unit: 1,000B/D)

Oil Company	IOCL	BPCL	HPCL	MRPL	Reliance	EOL	Total Iranian crude oil	Total imports	Share of Iranian crude oil
FY2008	**36**	**8**	**28**	**161**	**88**	**106**	**428**	**2,666**	**16.0%**
(Total volume processed)	1,032	401	317	254	715	259	2,979	3,227	
(Refinery capacity)	951	392	261	195	663	211	2,672	2,992	
FY2009	**50**	**0**	**64**	**139**	**66**	**106**	**426**	**3,198**	**13.3%**
(Total volume processed)	1,018	409	317	252	1,224	271	3,491	3,747	
(Refinery capacity)	998	392	261	195	663	211	2,719	3,574	

(Source) Ministry of Petroleum & Natural Gas

The volumes of Iranian crude oil processed vary greatly among oil refinery companies. For example, in fiscal 2009, MRPL and EOL together accounted for almost 60 percent of the total processed (Chart 5). The crude oil imported from Iran to India is mainly heavy crude oil, which is used mostly to produce high-sulfur diesel for agricultural machinery and pumps.

While India maintains an Iranian supply of 400,000 B/D, it has also increased oil supply from Saudi Arabia. In February 2010, state-owned Saudi Aramco agreed to increase its supply of Saudi Arabian oil to India from the conventional 25.50 million tons (approximately 520,000 B/D) to 40.00 million tons

[12] Imports from other countries were: Saudi Arabia 18%, Iran 11%, other Middle East countries 34%, Africa 22%, western hemisphere 10%, other 5%

(approximately 800,000 B/D) by 2012[13]. Furthermore, in August 2011, when India faced problems regarding payments for Iranian oil, Saudi Arabia supplied a total of 3 million barrels of spot oil - 1 million barrels each to BPCL, HCL and EOL. Furthermore, not only Saudi Arabia but also Kuwait, which currently exports 280,000 million B/D to India, has expressed its interests to increase this figure.

There has been confusion regarding payments for Iranian crude oil. In December 2010, in response to US sanctions against Iran, the Reserve Bank of India (RBI), India's central bank, was prohibited from making settling payments for crude oil imports through the Asian Clearing Union (ACU), which settles payments between member central banks on behalf of domestic companies. Therefore, India at first attempted to make its payments in Indian rupees, but Iran showed strong reluctance towards rupee-based payments as they could only by used to purchase goods from India or to make reinvestments in India, and thus, the State Bank of India (SBI), a private financial institution tried a new mode of payment in euros through Europeisch-Iranische Handelsbank (EIH: European-Iranian Trade Bank AG), an Iranian bank based in Germany. In March 2011, 1.5 billion euro (2.07 billion US dollars) was transmitted through the EIH, which was included in EU's embargo after strong American protests in April 2011. Consequently, this payment method was abandoned in May 2011.

As a result, debts to Iran have exceeded 5 billion dollars as of June 2011, causing Iran's notification that it would suspend exports beyond August 1. Indian oil companies asked Saudi Arabia, Kuwait and UAE for emergency increases in their exports to India. At the end of July 2011, MRPL succeeded in transferring money in euros through Halkbank (HALKB), a Turkish bank, and all debts were paid in full by the end of September. However, in January 2012, Halbank notified Indian oil companies that they would no longer accept these transmissions. Having lost their means of making payments to Iran, the following breakthroughs are currently under discussion.

2-4-2 Status of response from the Indian government and companies

In response to the adoption of the US bill for sanctions against Iran, India's Foreign Minister Ranjan Mathai has expressed India's diplomatic intentions not to implement any sanctions other than those of the UN. The minister has taken the diplomatic stance of showing disapproval for the sanctions by stating that India will not request any waivers under the US sanctions.

On the other hand, administrative discussions have been held regarding countermeasures against the sanctions. Payments for Iranian crude oil from India had been made through Turkey's Halbank since July 2011, but the bank, under the influence of the recent US sanctions, has suspended this operation, therefore leaving the Ministry of Petroleum and Natural gas and Indian oil companies to discuss their next step, which appears to include payments in Indian rupees, barter transactions and settlements via Russia[14]. Local Indian newspapers have reported that Iran-India dialog in January 2012 have concluded that 45 percent of payments for crude oil purchased will be made in Indian rupees through India's UCO Bank and Bank Parsian and Karafarin Bank, the two Iranian banks which are not yet covered by US sanctions[15]. In addition to new modes of payment, the Ministry of Petroleum and Natural Gas is reported to have ordered the three companies, MRPL, HPCL and EOL, which import large volumes of Iranian crude oil, to research alternative sources[16].

The Indian companies have presented the following countermeasures, showing a shift towards diversified

[13] According to Petroleum Intelligence Weekly、March 29, 2010, increased amounts are expected to be supplied to Indian Oil Corp's Paradip refinery（300,000 B/D）、Hindustan Petroleum's Bhatinda refinery (180,000 B/D)、Bharat Petroleum's Bina refinery(120,000 B/D) (all scheduled to operate from September 2011 to November 2012)

[14] Reuters（online version, January 12, 2012

[15] The Indian Express (online version), February 2, 2012

[16] Petroleum Intelligence Weekly, January 16, 2011

crude oil sources against the backdrop of enhanced economic sanctions against Iran[17]:

- MRPL: Current Iranian crude oil transactions amount to 142,000 B/D. The term contract for 2012 not having yet been finalized, it is reported to be concluded at a reduced amount of 15 percent less than the previous year[18].
- EOL: Reductions in Iranian crude oil from current levels of 110,000 B/D.
- HPCL : Doubled supply from Saudi Arabia to 60,000 B/D.
- BPCL : Crude oil imports from Iran have currently been disrupted despite a term contract of approximately 20,000 B/D, due to suspended transactions by Turkish state-owned Halkbank.

Crude oil imports from Iran to India stood at 328,000 B/D during the period from January through June 2011 and marked approximately 400,000 B/D and approximately 550,000 B/D in December 2011 and January 2012, respectively. There have been reports that the US has made implications of sanctions against India, which continues to show no sign of decreased crude oil imports from Iran.[19][20].

2-5 Taiwan

2-5-1 Status of Taiwan's crude oil imports from Iran

The total volume of crude oil imported to Taiwan in 2010 amounted to 868,000 B/D, of which 689,000 B/D, or 79.4 percent, was of Middle East origin (Chart 6). 290,000 B/D came from Saudi Arabia, 195,000 B/D from Kuwait, 63,000 B/D from Iraq, and 59,000 B/D from Iran. Taiwan had not purchased oil from Iran until the breakout of the Gulf War in1990, when it entered into the ongoing term contract of 30,000 B/D to cover the drastically reduced production in Kuwait. Iranian crude oil accounted for as much as 18.3 percent in 2003, but has followed a downwards trend since then, to a 6.8 percent share in 2010, and 4.3 percent during January through November, 2011. In terms of imports by company, the largest oil company in Taiwan, the state-owned CPC is reported to have reduced the ratio of Iranian crude oil from 11 percent of its portfolio in 2010 to 4.7 percent in 2011[21].

[17] Ibid.
[18] Bloomberg (online version), March 15,2012
[19] Petroleum Intelligence Weekly, February 20, 2012
[20] Bloomberg (online version), March 15, 2012
[21] Bloomberg (online version), January 7, 2012

Chart 6 Taiwan's crude oil imports by country (Unit: 1,000B/D)

	1995	2000	2005	2006	2007	2008	2009	2010	2011 (Jan-Nov)
Saudi Arabia	171	153	294	308	319	303	321	290	238
Kuwait	58	79	241	212	202	204	190	195	156
Iraq	0	24	50	35	83	58	92	63	23
Iran	51	69	132	112	110	118	74	59	30
UAE	40	40	48	65	59	46	44	44	44
Oman	50	39	41	34	27	29	47	39	11
Buffer zone	13	30	32	5	0	0	0	0	0
Angola	15	25	51	76	79	52	52	84	124
Republic of Congo	47	102	42	42	18	25	26	25	12
Australia	33	56	13	7	13	12	7	12	0
Indonesia	48	23	8	12	4	5	5	4	0
Other	51	106	95	92	75	61	84	54	69
Total	576	745	1,046	1,001	990	915	942	868	708
Share of imports from Iran	8.9%	9.2%	12.6%	11.2%	11.1%	12.9%	7.8%	6.8%	4.3%

(Source) Bureau of Energy, Ministry of Economic Affairs

2-5-2 Status of response from Taiwanese government and companies

No clear policy direction has been reported in terms of the Taiwanese government or companies. However, judging from the close relations between Taiwan and the US, Taiwan is likely to reduce crude oil transactions with Iran, according to US demands.

2-6 Europe

2-6-1 Status of Europe's crude oil imports from Iran

The EU (27 member states) imported a total of 11.18 million B/D of crude oil in 2010 (Chart 7). From Iran, it imported 60,900 B/D, a decreased amount compared to levels in the mid-2000s when Iranian crude oil stood at approximately 700,000 B/D. The EU as a whole is highly dependent on Russian oil, but it has diversified its supply source among Norway, Central Asia (Azerbaijan and Kazakhstan), Africa (Libya and Nigeria) as well as the Middle East. Iranian crude oil accounts for 5 percent of total EU crude oil imports and thus seems to be of trifling importance in terms of ratio, but the actual volume of imports exceeds that of China and Japan. Consequently, the EU ban on Iranian crude oil imports is likely to greatly affect Iran.

By country, Italy, Spain, Greece and Belgium greatly rely on Iranian crude oil and collectively account for almost 80 percent of crude oil imports from Iran (Chart 8). This implies that only a small portion of EU member states are highly dependent on Iranian crude oil and that the level of dependency is greatly varied among different countries. Also, in these four countries, crude oil from Iran has a non-negligible ten percent share of total imports. (Figure 3)

Chart 7　EU's crude oil imports by nation

Unit: 1000B/D

	1995	2000	2005	2006	2007	2008	2009	2010	2011 (1-5月)
EU	1,009	1,237	911	943	901	785	683	764	259
Norway	2,034	2,308	1,947	1,756	1,684	1,718	1,590	1,406	580
Russia	1,532	2,362	3,742	3,778	3,716	3,581	3,470	3,580	1,514
Azerbaijan	0	75	146	254	333	363	415	440	209
Kazakhstan	2	194	513	522	520	549	562	572	267
Other Europe and former USSR	0	19	31	16	85	67	70	56	27
Algeria	252	336	405	288	210	292	171	131	85
Angola	96	78	142	85	229	296	283	162	71
Libya	964	914	1,012	1,038	1,092	1,133	945	1,070	229
Nigeria	573	450	374	406	305	456	473	434	234
Other Africa	342	286	261	334	350	416	393	374	147
N.America and C. & S.America	354	348	411	452	446	478	371	358	127
Iran	1,053	712	698	704	694	611	494	609	197
Iraq	0	628	247	334	383	379	398	343	102
Saudi Arabia	1,655	1,308	1,220	1,026	809	781	599	620	299
Syria	301	266	181	150	160	140	137	157	41
Other Middle East	252	207	174	173	162	140	92	65	37
Asia	1	0	0	0	0	1	1	22	13
Other	455	222	1	0	1	0	15	18	11
Total	10,874	11,949	12,416	12,261	12,080	12,186	11,163	11,182	4,451
Share of imports from Iran	9.7%	6.0%	5.6%	5.7%	5.7%	5.0%	4.4%	5.4%	4.4%

(Note) data for 2011 represent a sum of figures from January to May 2011
(Source) Eurostat

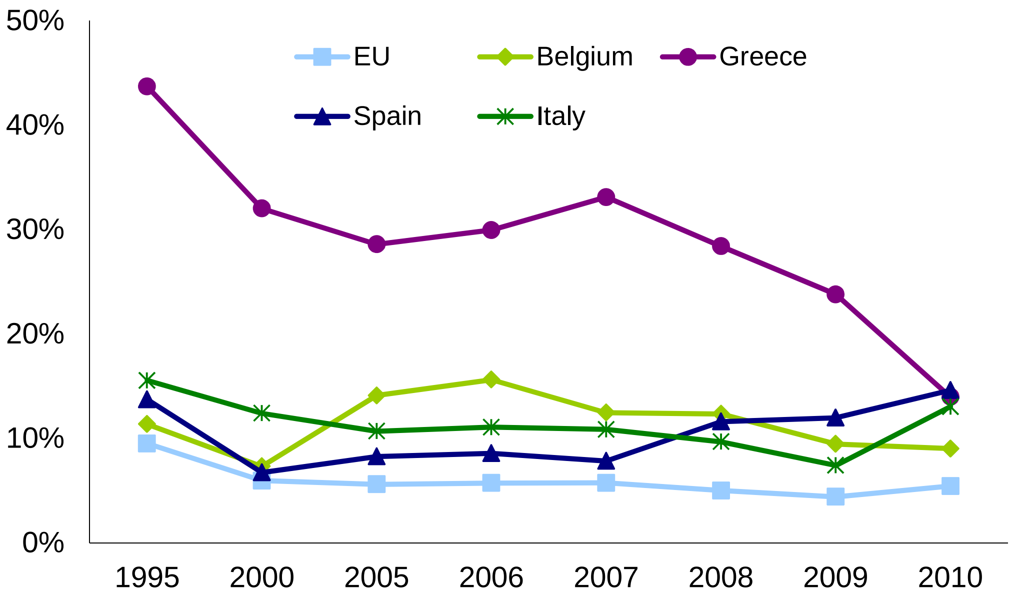
Chart 8 Major EU importers of Iranian crude oil and share of total EU imports

Unit：1,000B/D

	1995	2000	2005	2006	2007	2008	2009	2010
Belgium	60	50	91	99	83	84	59	61
	6%	7%	13%	14%	12%	14%	12%	10%
Greece	135	125	107	119	135	110	85	57
	13%	17%	15%	17%	19%	18%	17%	9%
Spain	152	78	99	104	91	137	126	154
	14%	11%	14%	15%	13%	22%	25%	25%
Italy	230	209	192	194	192	160	114	206
	22%	29%	28%	28%	28%	26%	23%	34%
Other	477	251	209	188	193	120	110	132
	25%	21%	10%	7%	9%	5%	10%	16%
Total	1,053	712	698	704	694	611	494	609

(Source) Eurostat

Figure 3 Trends of major EU importers in dependency on Iranian crude oil



(Source) Eurostat

2-6-2 Status of response from European countries

Since December 2011, the tightening of sanctions against Iran has become a major agenda in the EU, in line with the enhancement of US pressures on Iran. Underlying this trend is the International Atomic Energy Agency (IAEA)'s report published on November 8, 2011 which referred to nuclear developments in Iran to have "possible military dimensions." With rising concerns over Iranian nuclear development, the EU Foreign Affairs Council meeting held in Brussels on December 1, 2011 decided that issues regarding the enhancement of sanctions in the energy and financial sectors would be discussed before January 2012. Later, the details of the prohibitions elaborated earlier in section 1-2 were determined at the Foreign Affairs Council meeting of March 23. Initially Italy and Spain took a cautious stance against the sanction because they are large importers of Iranian crude oil. These countries yet finally agreed the sanction and as of April 2012 Spain has already ceased to purchase Iranian crude oil.

2-7 Turkey

2-7-1 Turkey's crude oil imports from Iran

Turkey is also highly dependent on Iran for crude oil. In 2010, Turkey imported 150,000 B/D from Iran which is small in terms of volume compared with Asian countries (Chart 9) but represents more than half of total crude oil imports. Turkey had originally depended on Iran for around 30 percent of its total imports, but increased Iranian imports in 2010 when Turkish refineries assessed Iranian crude oil to be less expensive, and the crude oil supply from Libya was disrupted, leaving the country in need of an alternative supply source. In terms of the national dependency level for Iranian crude oil, Turkey will be exposed to the most damaged in the face of import bans on Iranian oil.

Chart 9 Turkey's crude oil imports by country of origin

								Unit: 1,000B/D
	1995	2000	2005	2006	2007	2008	2009	2010	2011 (1-9月)
Iran	110	76	138	180	176	155	65	149	147
Iraq	0	82	20	11	19	37	39	43	48
Saudi Arabia	189	75	70	70	71	68	40	36	27
Other Middle East	37	45	7	0	5	10	3	8	5
Africa	127	72	91	84	12	0	7	0	0
Russia	28	45	141	136	179	138	115	66	29
Kazakhstan	0	5	0	0	2	16	9	33	18
Other Europe and forme	0	0	3	2	7	12	7	5	4
Other	4	33	0	0	0	0	0	0	0
Total	496	433	470	483	471	436	286	340	278
Share of imports from Iran	22.2%	17.6%	29.4%	37.3%	37.4%	35.4%	22.9%	43.7%	52.9%

(Note) Data for 2011 represent a sum of figures for January 2011 through September 2011
(Source) Eurostat

2-7-2 Status of Response from Turkish government and companies

In response to the recent US sanctions, Turkish Energy Minister Yildiz has indicated that "our country will be bound by sanctions decided by the UN resolutions and are not bound to any decisions made by other parties (such as the US and EU: author's note)" and has made it clear that "it is continuing to import Iranian crude oil, and, as of today, there has been no change in our roadmap."[22] However, there are also views that other government authorities who have closely observed the sanctions taken by the US during these past months intend to request waivers.

When the Turkish government stated its opposition to US sanctions against Iran in 2010, some companies reduced their volume of transactions with Iran, fearing that sanctions may have adverse effects on their business. Therefore, this time as well, state-owned Halkbank is said to be restricting transactions between Turkey's refiner, Tupras[23] and Iran[24]. Furthermore, the bank had served as an intermediary for payments for purchases of Iranian crude oil by Indian oil companies but, as aforementioned, has suspended such operations from the start of 2012. On the other hand, Tupras appears to have renewed its term contract to purchase Iranian crude oil for 2012. Hence, the government, financial institutions and oil companies have taken varied responses to the sanctions against Iran.

2-8 Status of response from oil producing countries

OPEC has not made any formal comments in regard to the import bans on Iranian crude oil. At the OPEC General Assembly meeting held on December 14, 2011, it was decided that the current production level of 30 million B/D (for the twelve member countries, including Iraq) would be maintained, increasing, in effect, the output quota of 24.80 million B/D that had been unchanged since January 2009. The surplus production capacity for OPEC as a whole (excluding Iraq) was 2.80 million B/D as of December 2011. Saudi Arabia represented 64 percent with its surplus production capacity of 2.15 million B/D.

Saudi Arabia has continued to increase production since summer 2011 and is prepared to enhance crude oil production, should the supply-demand balance be destabilized as a result of Iranian issues. The

[22] Financial Times, January 12, 2012
[23] Tupras, Turkey's largest firm (website: http://www.tupras.com.tr/masterpage.en.php), possesses four refineries in Turkey (total crude oil processing capacity: 560,000 B/D)
[24] Financial Times, January 12, 2012

Petroleum and Mineral Resources Minister Al-Naimi also commented in an interview with CNN on January 16 that Saudi Arabia is capable of immediately increasing production by 2 million B/D and achieving 11.40-11.80 million B/D in two or three days.[25] Saudi Arabia has already gradually expanded its production volume, resuming the high levels recorded in the 1980s. In February 2012, Saudi Arabia produced 10.00 million B/D in crude oil.

In its relationship with Japan, Japanese Foreign Minister Gemba visited the Middle East in January and met with Saudi Arabian Petroleum and Mineral Resources Minister Al-Naimi. During the meeting, Mr. Naimi stated that Saudi Arabia, Japan's largest supplier of crude oil, was "ready to stably supply crude oil," guaranteeing Japan to a certain extent a stable oil supply. Foreign Minister Gemba revealed that he will send government officials to Saudi Arabia and the UAE to deliberate on the details of crude oil supply. It should be noted that Saudi Arabia has become a popular destination in the past months for national leaders, including British Prime Minister Cameron, Chinese Premier Wen Jiabao and Korean Prime Minister Kim Hwang-Sik, implying heated political activities for a secure and stable crude oil supply.

3. The Strait of Hormuz

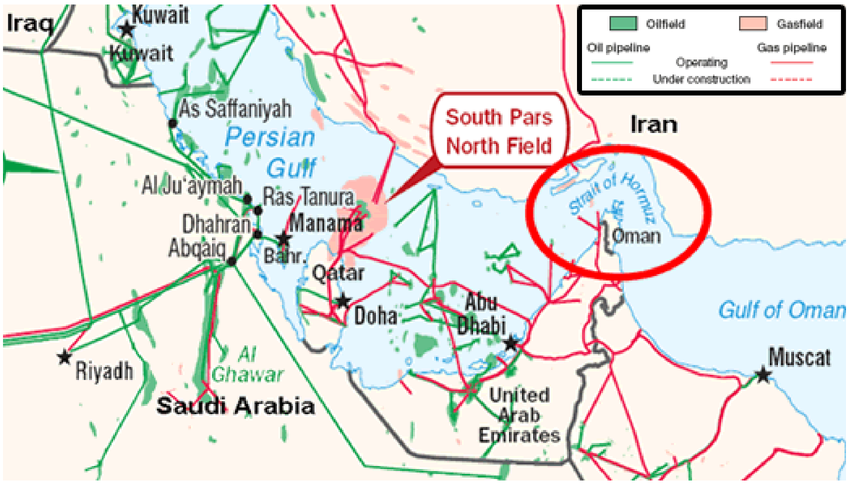
Finally, the paper will outline the basic facts related to the Strait of Hormuz, which has rapidly attracted intensive attention as a result of the recent tensions. The Strait of Hormuz is located between the Gulf Of Oman and the Persian Gulf and is one the world's most famous choke points[26] in marine transport (Figure 4). As later mentioned, about one-third of seaborne traded oil passes through the strait, making it an extremely important spot in the world's oil trade, The Strait of Hormuz is 280 km long and 34 km wide at its narrowest point, hence topographically not as tight as the Malacca Strait or the Bosporus Strait[27]. The traffic is separated by a 3 km-wide separation median with an inbound lane and outbound lane, each 3 km long, on both sides. Twenty-eight oil tankers pass through the strait every day.

[25] In the interview, the minister also stated that it would take approximately 90 days to reach the authorized capacity of 12.50 million B/D.

[26] A choke point is the topographically narrow part of a strait on an international marine transport route. Originally a security term, it refers to narrow passages that troops must go through from military strategy dimensions but are so narrow topographically that the enemy would have the advantage of blocking passage with very small forces. Valleys, railways and bridges are included

[27] For example, the Malacca Strait (Malaysia, Indonesia, Singapore) becomes as narrow as 2.7 km, and the Bosporus Strait (Turkey), only 698m wide, at their narrowest point.

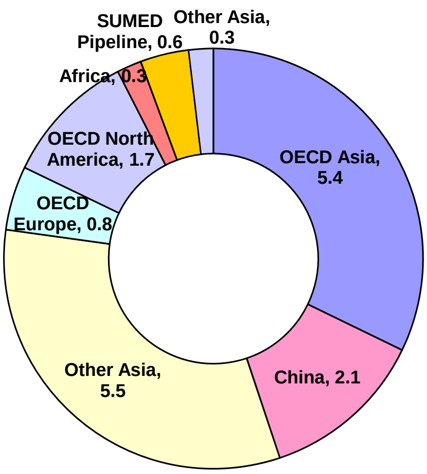
Figure 4 Geographic location of the Strait of Hormuz



(Source) US Energy Information Administration

According to the US Department of Energy, the trade volume that passed through the Strait of Hormuz was 15.50 – 16.00 million B/D in 2009-2010, and has increased to approximately 17.00 million B/D in 2011. This represents 35 percent of the world's seaborne traded oil or around 20 percent of the world's oil. The destinations of vessels passing through the Strait of Hormuz in January – October 2011 are provided in the figure below. Seventy-seven percent of the traffic that passes through the strait was bound for the Asia-Pacific region, including Oceania.

Figure 5 Destinations of oil passing through the Strait of Hormuz (Jan. – Oct. 2011)

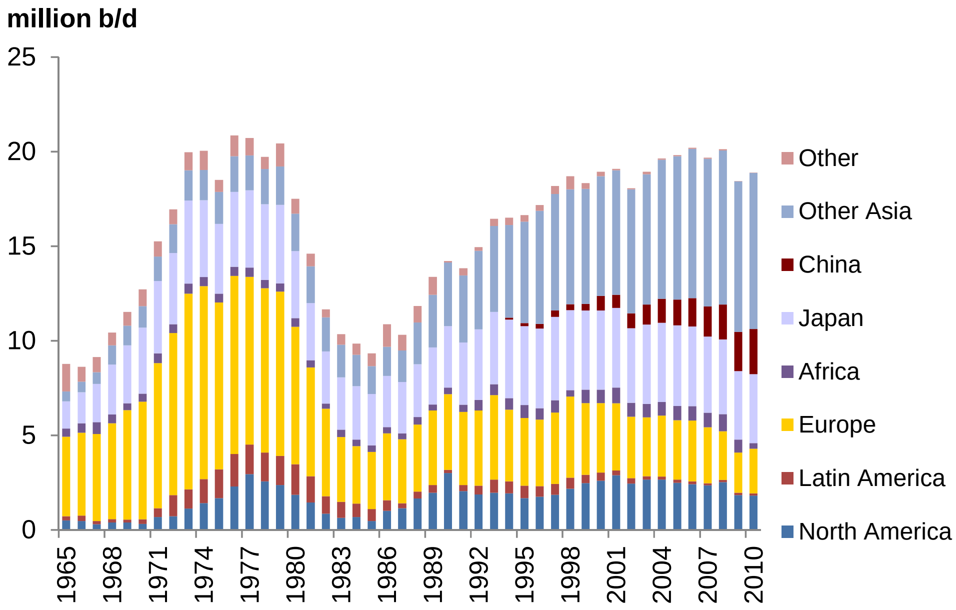


(Note) The SUMED Pipeline is a crude oil pipeline connecting the Red Sea and Mediterranean Sea. Figures include petroleum products.

(Source) IEA Monthly Oil Market Report (original data source: Lloyds Marine Intelligence)

Figure 6 presents longitudinal data of the traffic volume in the Strait of Hormuz since 1965. A majority of the oil was exported to Europe in the 1970s, but from the 1990s, the traffic destined for Asia have continued to increase. This implies that the closure of the Strait of Hormuz will have a greater direct impact on Asian consumers.

Figure 6: Trends in destination of oil passing through the Strait of Hormuz



(Source) estimated in part by the Institute of Energy Economics, Japan based on BP and IEA statistics

Conclusion

The adoption of new sanctions by the United States at the end of last year have further heightened international tensions related to Iranian nuclear development, therefore encouraging countries to pursue means to secure Iranian crude oil or otherwise seek alternative sources. Many variables remain concerning the future developments of Iran's nuclear issue. The uncertainties include not only the visible factors of economic sanctions by the US and import prohibitions by the EU but also concerns regarding transport via the Strait of Hormuz and possible air strikes by Israel. Therefore, if the future should hold a complete disruption of oil supply from a major oil producer as significant as Iran, or the closure of the Strait of Hormuz, the international crude oil market is bound to be affected to the fullest degree. Japan's primary focus is on the secure and stable supply of oil at a reasonable price. Against the backdrop of drastic changes caused by enhanced sanctions against Iran, Japan is likely to be faced with prolonged difficulties in achieving its national interests.

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