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Energy security through FDI: The legacy of Early Japanese Investment in the Oil Sectors of the Persian Gulf

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1. Introduction

The 25-year period stretching from the late 1950s until the early 1980s was the heyday of Japanese foreign direct investment into the Persian Gulf oil producing states. Japan's investments were instigateded by the enormous oil price spikes and shortages of the 1970s. These events drove Tokyo to enhance political and economic relations with energy-rich countries. Those relations, it was hoped, would result in ample supplies of oil, natural gas and refined products for energy-poor Japan. For that reason, the Japanese government provided financial support to private-sector companies, encouraging them to embark on "national projects," some of which turned out to be fraught with extreme financial risk.

This paper presents short case studies examining five such projects in the Gulf. The legacy and outcomes of Japan's FDI ventures is a mixed one. On the one hand, Japan did create goodwill and strong ties with Gulf oil producers which remain important in the present day. Japanese equity in Gulf crude oil production also succeeded in providing a small but steady supply of Japan's imported crude. On the other hand, Japanese firms fell victim to government expropriation and other legal-economic hazards. In one case, a struggling Japanese joint venture failed when it became part of a wartime battlefield. For the FDI recipients, the legacy of Japanese FDI remains a mixture of strong technical transfers, particularly in petrochemicals, but limited assistance in economic diversity or job creation.

2. Government support to Japan's FDI to the Middle East energy sectors

A key facet of Japanese energy security policy in the uncertain era of the 1970s and early 1980s – a period of spiking prices, oil production outages, and fears of import dependence – was a little-publicized government policy incentivizing Japanese firms to invest in the energy sectors of Persian Gulf oil producing countries. The Japanese government considered FDI as a tool of economic cooperation, with Tokyo touting its willingness to transfer technical, managerial and financial resources to strengthen Japan's economic relations with—and ultimately its energy supply from – major oil producers.

Figures from Japan's Ministry of Finance show that nearly $6 billion in Japanese FDI went to the Middle East between 1951 and the end of 2004, nearly all of it to oil producing states in the Persian Gulf. These investments, made chiefly by Japanese firms, represent just 1% of Japan's worldwide cumulative FDI, but supported a few large "national projects" of strategic importance. These projects, detailed in case studies below, achieved mixed results amid broad changes in oil markets. Gulf FDI in aggregate was a small portion of overall Japanese global investment, most of which flowed to developed North America, Europe and Asia, regions with stronger market opportunities as well as labor force and infrastructure quality, and reduced political risk (Fig. 1).

The context for much of the history covered here is the aftermath of the 1973-74 Arab oil embargo, when Saudi Arabia, Iran and its

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[1] https://www.jetro.go.jp/ext_images/world/japan/stats/fdi/data/fdi_outward.xls (May 31, 2020). Note: JETRO complied the original data from "Taigai oyobi tainai chokusetsu toushi jokyo" by Ministry of Finance, Japan (a statistics published in Japanese).

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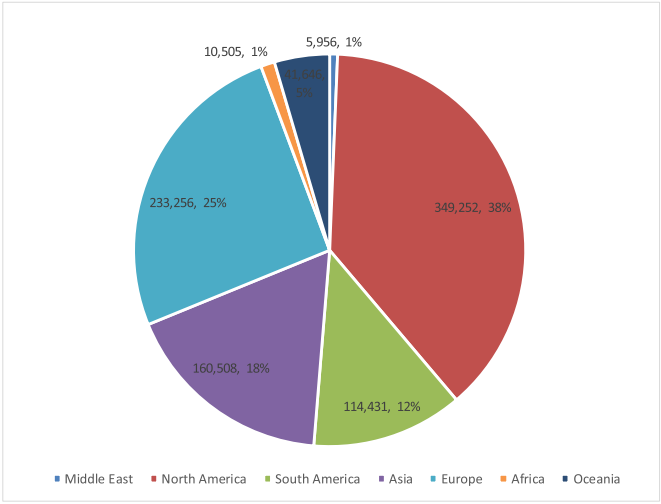

Fig. 1. Regional distribution of Japan's FDI (cumulative total for the period of 1951–2004)[1].
Source: Ministry of Finance, Japan and JETRO

disseminating information on investment opportunities in the oil-rich Persian Gulf region, providing financial support for investment and help in marketing Japanese products and services in the target countries.[3]

2.1. Assistance to collect and provide information

A key enabler of Japanese FDI in the Gulf came via economic delegations sent to the region. Delegates provided technical expertise in coordination with economic attaches in Japanese embassies inside target countries.[4] Among the participants were government-led organizations such as the Japan External Trade Organization (JETRO), Japan International Development Organization (JAIDO), Japan Cooperation Centre for the Middle East (JCCME), and the Petroleum Energy Centre (PEC). These and other groups also offered investment seminars in Japan to promote investment in the Persian Gulf region. Later, Japan's Ministry of International Trade and Industry began to encourage direct investment, subsidizing the cost of delegations, exhibitions and public relations exercises.[5]

2.2. Varieties of Japanese FDI and financial assistance

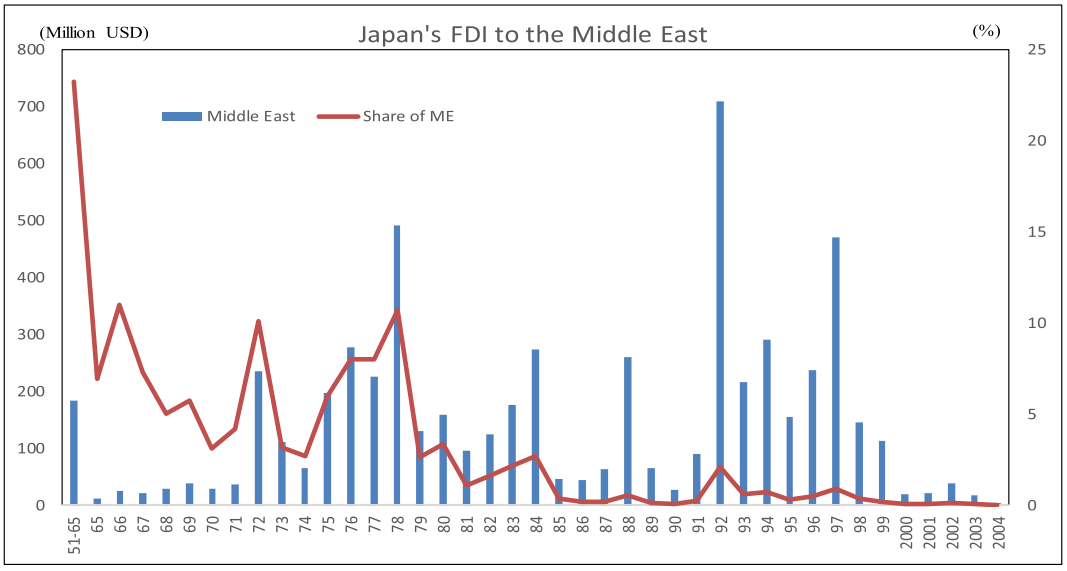

Fig. 2. Trend in Japan's FDI to the Middle East[11].
Source: Ministry of Finance, Japan and JETRO[12]

neighbors embarked on large-scale economic development programs. The ensuing oil boom left importing countries like Japan launching new efforts to secure energy supply amid major price increases. The Japanese government's "national projects" program was one of these; a strategic effort to deploy Japanese investment and technology inside petro-states, with the aim of diversifying oil-dependent economic structures in ways that would create employment for young, fast-growing populations. Japan's national projects leveraged FDI to insert Japanese firms into the diversification process in hopes of creating durable bi-directional trade links and ultimately, a co-dependent trade relationship that could relieve anxieties around oil supply. In fact, Japanese investment in Saudi Arabia, for a time, was *directly* exchanged for a guaranteed supply of Saudi crude oil.[2]

The Japanese government encouraged private sector FDI by

Five types of Japanese government financial assistance were used to promote Persian Gulf FDI. These included[6]:

- Funding for feasibility studies examining prospective investments. This funding was channeled through JETRO, JAIDO, JCCME and the Japan International Cooperation Agency, or JICA.
- Investment loans from the Export-Import Bank of Japan (EIBJ). These loans took the form of overseas development assistance coupled with direct loans. For example, EIBJ support to Iran in the

[2] Mistubishi Corporation (1990), "Mistubishi Shoji Shashi" (Publication written in Japanese).

[3] Ken Koyama (2000), "Japan's Enegry Strategy Towards the Middle East" (Phd thesis, University of Dundee).

[4] A typical example was the first government economic delegation that visited Iran in 1968. It was reported that the information given to the delegation, on the existence of huge amounts of flared gas at the Iranian oil fields, was the origin of the IJPC project.

[5] Ken Koyama (ibid).

[6] Ken Koyama (ibid).

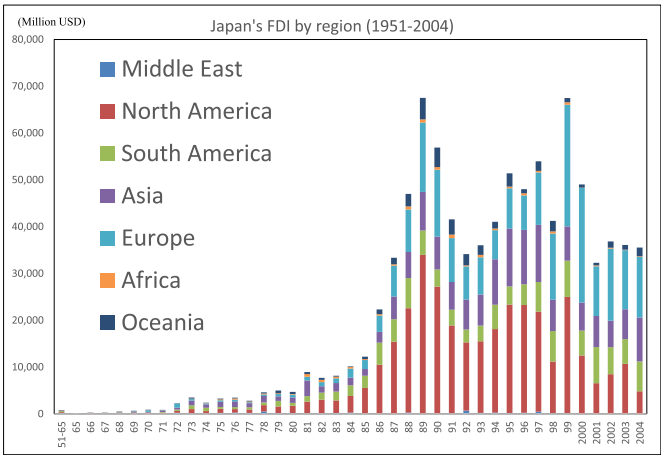

Fig. 3. Trend in Japan's FDI by region.
Source: Ministry of Finance, Japan and JETRO[14]

oil production in the Saudi-Kuwait Neutral Zone.[9]

A second FDI initiative brought Japanese investment to the Iranian side of the Gulf. As Fig. 2 shows, Japanese investment in the Middle East increased from $36 million in 1971 to $492 million in 9178 because of the bolstered FDI to the Iran-Japan Petrochemical Co. (IJPC) in 1978.[10]

Japanese direct investment in the Middle East peaked in 1978 at nearly 11% of total outward FDI (Fig. 2). In the 1980s, Japan sharply reduced its direct investment in Iran, due to political and economic turmoil of the Iranian Revolution and the Iran-Iraq war. The unrest forced the shutdown of the IJPC, a major loss for Japan (discussed below), and an event that encouraged Japanese companies to be cautious about investment opportunity in Iran. Iran-bound FDI dropped to almost zero after 1980.

In Saudi Arabia, a similar – albeit less abrupt – downturn in FDI occurred. Between 1981 and 1985, $239 million in Japanese investment assisted construction of the Saudi Methanol Co. (AR-RAZI) and the Eastern Petrochemical Co. (SHARQ),[13] discussed below. Afterward, Japan's direct investment in Saudi Arabia and the Gulf stagnated for several years. FDI was negligible after the fall in oil prices in the mid

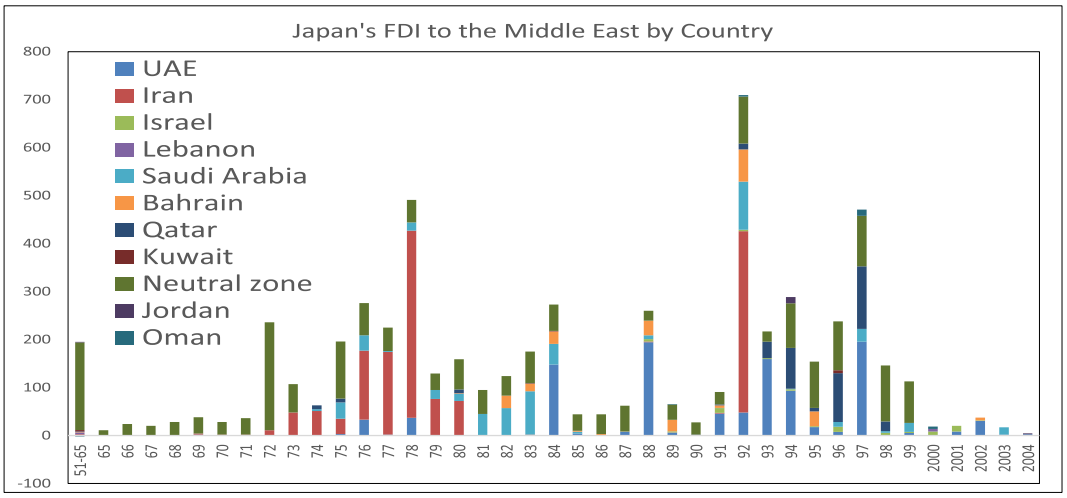

Fig. 4. Distribution by country of Japan's FDI in the Middle East, USD Millions.
Source: Ministry of Finance, Japan and JETRO

mid-1970s included 29 billion yen in development aid and a direct loan of 60 billion yen to the Iran-Japan Petrochemical Co., the IJPC.[7]

- Investment also flowed through the Japan National Oil Corporation (JNOC) (renamed in 2004 as Japan Oil, Gas, and Metal Corporation, or JOGMEC) and Japan's Overseas Economic Cooperation Fund (OECF). These corporations took equity stakes and became joint venture partners with Gulf-based companies in strategic "national projects."
- JNOC/JOGMEC also extended loans and equity capital for upstream oil and gas development.[8]
- The Ministry of International Trade and Industry (MITI) provided insurance for Japanese FDI in high-risk countries, helping offset risks such as war, unrest, and revolution.

3. Development of Japan's FDI to the Persian Gulf energy sectors

Between 1950 and 1970, Japan's FDI in the Middle East totaled $334 million, nearly all of which ($326 million, 97% of the total) went toward

1980s, signaling the start of a nearly two decade "oil bust." (Fig. 2)

Declining Japanese interest in the Middle East did not signal a worldwide aversion to foreign investment. On the contrary, Japan's total direct investment *increased* sharply in the late 1980s (Fig. 3) driven

[7] Hiro (1989), "IJPC Seisan made no keii to kyokun" (Publication written in Japanese).

[8] Japanese government started discussion to reshuffle JNOC in the late 1990s and finally decided to abolish JNOC in 2001.

[9] https://www.jetro.go.jp/ext_images/world/japan/stats/fdi/data/fdi_outward.xls (May 31, 2020). Note: JETRO complied the original data from "Taigai oyobi tainai chokusetsu toushi jokyo" by Ministry of Finance, Japan (a statistics published in Japanese).

[10] The investment by JODCO ($780 million) in 1972 in the form of share acquisition of an affiliate company of BP was counted as investment in Europe, not in the Middle East. See page 10–11 about the JODCO investment.

[11] FDI data from JETRO is based on the definition of the Middle East countries includinh Bahrain, Iran, Iraq, Israel, Kuwait, Jordan, Lebanon, Neutral Zone, Oman, Qatar, Saudi Arabia, UAE and others.

[12] https://www.jetro.go.jp/ext_images/world/japan/stats/fdi/data/fdi_outward.xls (May 31, 2020). Note: JETRO complied the original data from "Taigai oyobi tainai chokusetsu toushi jokyo" by Ministry of Finance, Japan (a statistics published in Japanese).

[13] Operation started in 1983 for AR-RAZI and 1985 for SHARQ.

[14] https://www.jetro.go.jp/ext_images/world/japan/stats/fdi/data/fdi_outward.xls (May 31, 2020). Note: JETRO complied the original data from "Taigai oyobi tainai chokusetsu toushi jokyo" by Ministry of Finance, Japan (a statistics published in Japanese).

by new flows to North America and Asia.

The total $5.96 billion in Japanese FDI in the Middle East from FY 1951 to 2004[15] was a small fraction of the global total from Japan, as shown in Fig. 3. More than 95% of Japan's Middle East investment went to the Persian Gulf, starting with the Saudi-Kuwait Neutral Zone, followed by Iran, UAE, Saudi Arabia and Qatar, with small amounts for Bahrain and Oman (Fig. 4). Remaining Mideast FDI went to Israel, Lebanon and Jordan.

The remainder of this paper focuses on Japan's strategic "national projects" that arose from the nearly $6 billion in Gulf FDI: AOC's heavy oil production in the Neutral Zone, the Iranian petrochemicals joint venture, JODCO and Abu Dhabi National Oil Company (ADNOC) in UAE, and the AR-RAZI and SHARQ projects in Saudi Arabia.[16] These five projects formed the keystones of Japan's energy security-driven Gulf FDI effort. They are presented as brief case studies in the following section.

4. Case studies of Japan's FDI to the Middle East energy sectors

4.1. Arabian Oil Company (AOC)

The Arabian Oil Company venture dates to 1957, when Taro Yamashita, President of Japan Petroleum Trading Co Ltd, visited Saudi Arabia to negotiate a concession agreement with the Saudi government. The two parties concluded a 40-year agreement in December 1957 that allowed oil development in the offshore Saudi-Kuwait Neutral Zone with profit sharing of 56% to Saudi Arabia and 44% to Japan. A similar agreement was concluded with the government of Kuwait in July 1958 with profit sharing of 57% to Kuwait. Shortly thereafter, the Saudi profit share was also raised to 57%, with Japan receiving 43%.[17]

With Japanese government backing, the Arabian Oil Company (AOC) was formed in 1958 with paid-up capital of 3.5 billion yen (roughly $9.7 million at the time). Funds came from 40 major Japanese private companies, including nine electric utilities as well as several steel companies and trading houses. AOC inherited the Neutral Zone concession as an operator. The 40-year Saudi concession would expire in 2000, while the Kuwaiti concession, signed later, was to expire in 2003.[18]

In January 1960, the very first well drilled – Well No. 1 – confirmed a huge oil field. The field, named Khafji, held estimated recoverable reserves of 6.6 billion barrels. Khafji came onstream and crude oil production increased quickly. A second field, Hout, was discovered in 1963. AOC's crude oil production peaked at 410,000 barrels per day (b/d) in 1972. Production from the fields remained above 300,000 b/d until the late 1990s.[19]

Japanese investment into AOC's Neutral Zone concession was the largest single Japanese FDI project in the Middle East[20]. By the end of 2004, direct investment in the Neutral Zone reached US$2.2 billion, accounting for more than a third of total Japanese direct investment in the Middle East (Fig. 5).

Crude oil developed by AOC became an important source of oil for Japan. Total cumulative imports of AOC crude oil reached 2.7 billion barrels by the end of FY 1999. Oil from the Neutral Zone accounted for nearly half – 46% – of total Japanese equity crude oil imported to Japan

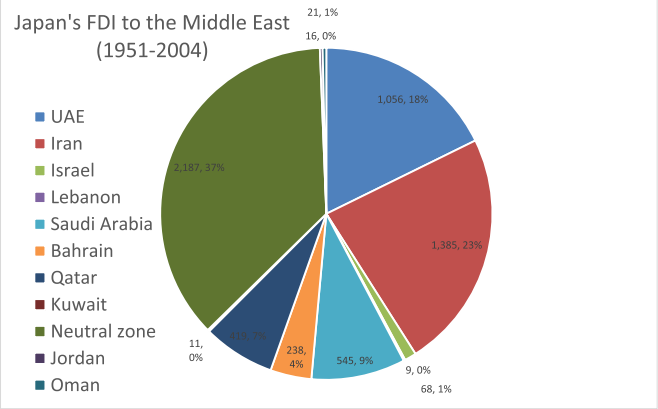

Fig. 5. Share by country of Japan's FDI distribution in the Middle East, %. Source: Ministry of Finance, Japan and JETRO

over the period since its development and 5.3% of total cumulative crude oil imports for the same period up to FY 1999.[21]

AOC's 40-year concession with the Saudi government was scheduled to expire on February 27, 2000. At the time, international oil prices remained low amid a glut in global supply. Brent averaged under $20 per barrel for most of the 1990s, and in 1998 the average Brent price fell below $13. Since AOC's only oil production came from the Neutral Zone, the company's survival hinged on renewal of the concession. However, the ample supply of oil on world markets at the time reduced Japan's willingness to offer major compromises to retain the concession. In the 1990s, AOC, backed by the Japanese government, began to negotiate with the Saudi government for renewal.[22] Delegates from MITI (later METI) visited Saudi Arabia for talks.

Saudi negotiators demanded more stringent terms, arguing that improved conditions were needed to compensate the kingdom for several opportunity costs.[23] These included:

- **Low operational efficiency.** Since AOC's experience was limited to the Neutral Zone, Saudi officials argued that the company's operations were less efficient than those of larger competitors. Saudi negotiators argued that replacement of AOC by the then fully state-owned Saudi national oil company Saudi Aramco – or another, larger international oil company – could reduce operational costs and improve profitability. These were important considerations for the rent-dependent Saudi government and economy, particularly amid the challenging 1980s-'90s "oil bust" period.
- **Discounted international** pricing **of AOC's heavy crude.** The introduction of new OPEC production quotas in 1982 implied a ceiling on total Saudi crude oil production. Such constraints incentivized the Saudi government to maximize production of higher value light crude, while reducing output of lower value heavy crudes like Khafji, in the interest of maximizing export revenues.[24]

[15] FDI data after 1951 by JETRO (originally from Ministry of Finanace, Japan) stopped publication after 2004 data. There is consistency problem after the data for 2005 and later.

[16] Ken Koyama (ibid).

[17] Arabian Oil Company (1993), "Wangan kiki wo norikoeta: Arabia Sekiyu 35 nen no ayumi" (Publication written in Japanese).

[18] Ken Koyama (ibid).

[19] Arabian Oil Company (ibid).

[20] This is based on JETRO (Ministry of Finance, Japan) official statictics for Japan's FDI. It is possible that other investment such as those in Qatar LNG can be larger in terms of amount of investment but the investment is not categorized as the FDI in the Middle East.

[21] Japan Petroleum Development Association, "Wagakuni sekiyu kaihatsu no genjo to kadai", Annuals (Publication written in Japanese).

[22] Ken Koyama (ibid).

[23] Ken Koyama (ibid).

[24] Ken Koyama (ibid). Actually, the Saudi government increased the production of light and low sulfur grades, for example, Arabian Super Light and Arabian Light, at the cost of heavy and high sulfur grade such as Arabian Heavy in the 1990s when total crude oil production of the country remained at around 8 million b/d for most of the period. According to PIW [1999], production of Arabian Super Light increased from zero production in 1991 to 200,000 b/d in 1997. So too did the production of Arabian Light, increasing from 4.5 million b/d to 5.1 million b/d during this period. Meanwhile, Arabian Heavy production declined from two million b/d to one million b/d.

To compensate for the implied opportunity costs, the Saudi government made the following preconditions for renewing the concession[25]:

- **Increased Japanese imports of Saudi crude.** The Saudi government proposed that import volumes should be raised from 1 million b/d (average rate of 1990–1998) to 1.5 million b/d so that Saudi Arabia could replace the UAE as Japan's leading crude oil supplier. The Saudis argued that the increase would improve trade stability and enhance Japan's energy security. However, the Saudi request was too difficult for Japan to accept because it forced Tokyo to reduce imports from other sources at a time when the Japanese crude oil demand had begun to flatten and, soon after, to decline. Japanese oil companies, locked into term contracts with other oil producing countries, were unable to accept the Saudi proposal.

Japanese investment in Saudi rail project. The Saudi government also insisted on Japanese investment in the construction of a major railroad as another essential precondition. The railroad project, with a total length of about 1400 km, was aimed at establishing a transportation link between mineral-rich areas in northern Saudi Arabia and a port on the Gulf. A Japanese feasibility study estimated the cost at $2 billion and questioned the economic viability of the proposed project. The feasibility study's results made it difficult for the Japanese government to commit taxpayers' funds or attract private sector investment. As a compromise, the Japanese government offered loans of 140 billion yen (around US$1.3 billion at the time) from the Japan Bank for International Cooperation (JBIC) to the railroad project, along with a further offer of 500 billion yen (around US$4.5 billion at the time) in financial assistance to Japanese FDI in Saudi Arabia.

The Saudis were not satisfied with the Japanese proposal. Negotiation between the two countries concluded without an agreement. AOC's concession in the Saudi Neutral Zone expired on March 6, 2000 and was taken over by Saudi Aramco.[26]

Since AOC still held a concession with the Kuwaiti government, the company briefly maintained its operation on the Kuwaiti side of the Neutral Zone. But AOC also failed in its attempt to renew the Kuwait concession beyond its 2003 expiration, and that opportunity, too, was lost.

Since 2003, AOC's sole remaining role in the Saudi-Kuwaiti Neutral Zone has been as a service provider.[27]

Despite the failure to renew the Neutral Zone concession, the project represented a major success. AOC oil flowed reliably to Japan for nearly four decades, and the concession's relatively equitable royalty split allowed it to outlast many other foreign oil concessions in the Middle East that were nationalized during the 1970s.

4.2. Iran Japan petrochemical company (IJPC)

In 1968, the Japanese government sent its first economic delegation to Iran. Discussions centered around developing a petrochemical project with Iranian counterparts.[28] Feedstock for the plant was to be sourced from Iranian associated natural gas that was being flared off, or burned at the wellhead, in nearby oilfields.

Japanese conglomerate Mitsui expressed interest in the plant. A site was chosen in the industrial port then known as Bandar Shahpur (now Bandar Imam Khomeini) at the head of the Gulf. In October 1970, Iran's National Petrochemical Company (NPC), a subsidiary of the National Iranian Oil Company (NIOC), proposed a joint feasibility study with Mitsui, offering various concessions to improve profitability.[29] The study began in early 1971.

Around the same time, a separate Japanese consortium led by Mitsui took part in bidding for oil exploration rights in Luristan province, in western Iran, 400 miles inland from the Persian Gulf. During the bidding process, NIOC informally told the Japanese consortium that Iran considered the signing of a Letter of Understanding for the petrochemical project as a precondition to the awarding of the Luristan bid. Pressed by the Iranian precondition, Mitsui signed the petrochemical LOU in July 1971. Oil exploration rights in Luristan were awarded to the consortium on the same day.[30]

A "basic agreement" on the petrochemical project was concluded between Mitsui and NPC in October 1971 and in 1973 the Iran-Japan Petrochemical Company (IJPC) was established. IJPC was a 50-50 joint venture between the Iran Chemical Development Company (ICDC), a Japanese consortium led by Mitsui; and Iran's NPC. The consortium agreed to construct a petrochemical complex in Bandar Shahpur with an annual production capacity of 300,000 metric tons of ethylene.[31]

The basic agreement estimated total capital requirements at 27.1 billion Iranian rials 128.9 billion yen; US$411 million at the time). However, persistent inflation in the early 1970s, accelerated by the 1973 oil crisis, dramatically raised the cost of IJPC to 550 billion yen, of which the Japanese were responsible for procuring 300 billion yen.[32]

Two loans in 1976 from the Export-Import Bank of Japan provided 89 billion yen (US$304 million at the time) in financial assistance. Construction of the petrochemical plant began in 1976. The plant was 85% complete when civil unrest in Iran resulted in the Shah fleeing the country in January 1979. Work on the petrochemical complex came to a halt in March 1979 amid the Iranian Revolution's sweeping social, political and economic changes.

Iran's new revolutionary government insisted on re-starting the project, but the interruption and a new bout of inflation added further costs. The Japanese government agreed to increase its assistance to IJPC in 1979 by an additional 20 billion yen (about US$84 million at the time) and construction re-started. The Japanese government's reasoning for not abandoning the project was that IJPC could become an important link between Japan and post-revolutionary Iran, a major repository of oil and gas.

But plant construction was again interrupted, this time by the September 1980 outbreak of the Iran-Iraq War. The IJPC plant, just 50 km from the Iraqi border, was damaged by Iraqi Air Force attacks. The increasing devastation and stalemated killing of the Iran-Iraq war finally made resumption of the project unrealistic. A settlement between Japan and Iran allowed final liquidation of IJPC in October 1989, but required

[25] Ken Koyama (ibid).

[26] In reality, Arabian Gulf Operation Company, a subsidiary of Saudi Aramco took over the AOC operation in the Saudi side.

[27] https://eneken.ieej.or.jp/data/pdf/831.pdf (November 1, 2020).

[28] During the visit, Sueyuki Wakasugi, Vice President of Mitsui & Co. spoke with Bagher Mostowfi, Director of the NPC, about Japanese investment to process flared natural gas in the Iranian oil fields. Mr. Wakasugi became the president of Mitsui in 1969. See Yasunobu Misato (1981), "Dokyumento: Iran sekiyu kagaku project" (Publication written in Japanese).

[29] For example, gas for raw material of the project was offered at the very low cost of only two cents per 1000 cubic feet.

[30] As for the upstream project, the Iran Nihon Petroleum Exploration Company (INPECO), comprised of a Japanese consortium, Mobil and NIOC, was established in March 1972 to explore oil in Luristan with Mobil being an operator. Against Japanese expectations, however, the exploration did not find oil in Luristan. After drilling nine wells, exploration was finally given up in December 1976.

[31] Yasunobu Misato (ibid).

[32] In April 1974, ICDC estimated the total capital cost at 284.3 billion yen, with further, estimated increases reaching 740.9 billion yen in October 1974. Following that, IJPC decided to reconsider the project plan and lower the cost, finally concluding that the total capital should be reduced to 550 billion yen. See Yasunobu Misato (ibid).

yet another payment from Mitsui, this time for 130 billion yen (about $1 billion at the time) as a compensation to Iran. The agreement was called "The Friendly Separation Agreement."[33]

The Iran-Japan Petrochemical Co. was fully liquidated in February 1990 without the unfinished plant being commissioned or achieving any return on hundreds of billions of yen invested by Mitsui and the Japanese government.

In the end, the Iran-Japan Petrochemical Co. fell victim to a particularly virulent period of political unrest, including a war that killed roughly one million victims. Much of the war took place in the vicinity of the partly built petrochemical complex. In fairness, the Japanese government was not the only foreign party that failed to predict the revolutionary unrest that would sweep Iran. Others including the US government and Central Intelligence Agency were also caught by surprise.[34] The failed Japanese investment did not provide direct benefits as intended, but Japan's amicable departure allowed the two countries to retain an oil trading relationship amid cordial ties that remained in place at the time of writing.

After the war, Iran's NPC managed to complete construction of the damaged petrochemical plant. Now known as the Bandar Imam Petrochemical Complex, it remained operational at the time of writing.[35]

4.3. Japan oil development company (JODCO)

In December 1970, British Petroleum (BP) informed the Industrial Bank of Japan (IBJ) of its intention to invite Japanese participation in oil production within the Abu Dhabi Marine Areas (ADMA) concession.[36] ADMA, a joint venture between BP (holding two thirds of the shares) and Compagnie Française des Petrole (CFP) holding one third of the shares at that time, had concession rights on oil exploration and development in a 17,000-square kilometer zone of the Persian Gulf, just off of Abu Dhabi. At the time, Abu Dhabi was preparing for formal independence as the largest member of the forthcoming United Arab Emirates, a federation of seven formerly British-affiliated tribal sheikhdoms. The UAE gained full sovereignty in 1971 with Abu Dhabi as its capital.

The lucrative ADMA concession included the enormous Umm Shaif and Lower Zakum oil fields. The two oil fields combined were then estimated to have a production capacity of 500,000 b/d with total reserves in place of 80 billion barrels.[37] BP sought Japanese investment to raise production from the Lower Zakum oilfield and to develop the Upper Zakum field, even as the company embarked on large-scale investment in Alaska and the North Sea.[38]

In December 1972, an agreement was reached between BP and the Overseas Oil Development Company (OODC), a Japanese consortium made up of major private Japanese companies. The major points were[39]:

- The Japanese would pay US$780 million for its acquisition of a stake in BP Exploration Holdings (BPXAH), an affiliate of BP that held two thirds of the share of ADMA;
- The Japanese partner would pay one-sixth of development costs estimated at US$2 billion over the following 12 years;
- The Japanese partner should be prepared to have paid-up capital of 24 billion yen at first, and later increase it to 70 billion yen (then worth US$ 233 million).[40]

Considering the size of the investment and the importance of the project to Japan's security of oil supply, the Japanese government decided to extend full support in December 1972, by making it the first "national project" receiving capital investment from the Japan National Oil Corporation (JNOC). In February 1973, the Japan Oil Development Company (JODCO) was established to oversee the project, equipped with paid-up capital of 24 billion yen (then worth US$86 million).[41]

JODCO inherited the agreement between OODC and BP, and bought 45% of the BPXAH's share, which implied net ownership of 30% of ADMA's concession rights.[42] In October 1972, the "participation agreement" was reached between foreign investors and the state-owned Abu Dhabi National Oil Company (ADNOC).[43]

But the concession agreement was almost immediately undermined. Within months, Abu Dhabi began a series of partial nationalizations. ADNOC increased its participation in ADMA to 25% in 1972 (thereby reducing the JODCO stake to 22.5%). Again in 1974, ADNOC increased its stake to 60% and left JODCO holding just 12%.[44] In 1977, JODCO became a direct 12% shareholder of ADMA, when a restructuring of ADMA took place to establish ADMA-OPCO as an operating company.[45]

Despite the various Abu Dhabi nationalizations that reduced the Japanese stake, ADMA became a key source of stable crude oil flows to Japan during the crucial period after the 1973 Arab oil embargo. JODCO's oil from the ADMA concession produced 27% of Japanese-developed crude oil imports, the second-largest source after the AOC concession in the Saudi-Kuwait Neutral Zone. Over the concession's first 30 years in operation, JODCO sent 1.81 billion barrels of Abu Dhabi crude oil to Japan, equivalent to 3% of total oil imports for the period.[46]

In 2004, JODCO became a subsidiary of INPEX Corp., a majority privately-held Japanese company which originated in the 1960s as a developer of oil and gas in Indonesia. INPEX started negotiation with the Abu Dhabi government in the middle of the 2000s to extend contracts for JODCO's existing offshore projects as well as to secure new contracts. With strong support from the Japanese government, INPEX/JODCO succeeded in the following achievements with Abu Dhabi:

- *Jan.* 2014*:* Extension of Upper Zakum contract up to 2041
- *Apr. 2015:* INPEX acquired a 5% equity interest in onshore production blocks operated by the Abu Dhabi Company for Onshore Petroleum Operations or ADCO.[47]
- *Nov. 2017:* Re-extension of Upper Zakum contract up to 2051
- *Feb. 2018:* INPEX acquired 10% equity interests in Lower Zakum oil field until 2058

[33] It was reported that Iranian President Rafsanjani himself had been involved in the Iranian decision, realizing that no large-scale Japanese investment could be expected unless the IJPC problem was settled.

[34] Warren Brown, "CIA Didn't Foresee 'National Revolution' in Iran, Chief Says." Washington Post, Feb. 5, 1979, p. A5; https://www.cia.gov/library/readingroom/docs/CIA-RDP99-00498R000100160040-3.pdf.

[35] Bandar Imam Petrochemical Complex, Petrochemical Commercial Co. website, 2020; http://www.petrochem-ir.net/en/plant/currentplant/bandarimambipc.

[36] Saburo Iwasa (1995), "Abu Dhabi no sekiyu shi 1–3", in "Sekiyu no kaihatsu to bichiku", June, August and October Issue, Japan National Oil Corporation (Publication written in Japanese).

[37] Teikoku Sekiyu (1992), "Teikoku Sekiyu 50 nen shi: Kaigai hen" (Publication written in Japanese).

[38] Saburo Iwasa (ibid).

[39] Mitsui Oil Explorarion (1994), "Sekiyu wo motomete kagirinaki chosen: Mitsui Sekiyu Kaihatsu 25 nenshi" (Publication written in Japanese).

[40] A "national project" in the history of Japan's oil policy can be defined as a project to which the Japanese government or goverenmental body such as JNOC participate as an owner by making capital investment into the project based on its recognition of the strategic importance for Japan's energy security.

[41] The capital comprised of 5.6 billion yen from OODC, one billion yen each from Mitsui Oil Exploration Co, Mitsubishi Oil Exploration Co, Sumitomo Oil Exploration Co, Fuyo Oil Exploration Co, Toyo Oil Exploration Co and World Energy Development Co, and 200 million yen each from Teikoku Oil and Japan Petroleum Exploration.

[42] Thereafter BPXAH was renamed as BP-JODCO.

[43] Yasunobu Iwasa (ibid).

[44] Yasunobu Iwasa (ibid).

[45] Yasunobu Iwasa (ibid).

[46] Ken Koyama (ibid).

[47] In 2017, ADNOC consolidated state-owned oil and gas production firms, including ADCO, under the ADNOC headquarters and brand.

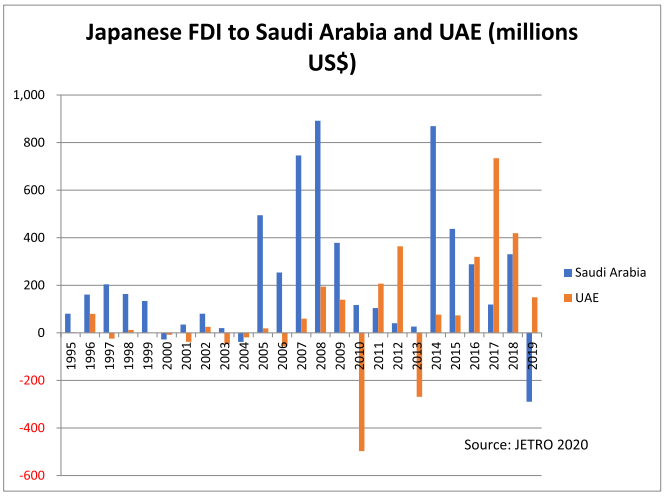

Fig. 6. Japanese investment in Gulf oil exporters surged 2005-9 and again 2014-18.

- *Feb. 2018:* Extension of Umm Al Dalkh and Satah contracts up to 2043.

At the time of writing, the oil fields in the ADMA area, Upper Zakum, Umm Al Dalkh and Satah, and two smaller fields, continued to produce crude oil destined for Japan.

Japan remains an important trading and investment partner with the UAE, given its role in developing the oil sector that began prior to formal UAE independence. The UAE and its capital Abu Dhabi have since become a wealthy and developed state, a major player in regional affairs, and an important importer of Japanese consumer and industrial goods. The early ADMA concession, flawed as it was, provided Japan with numerous secondary benefits.

4.4. Eastern Petrochemical Company (SHARQ)

In 1970, Japan's Mitsubishi group and Saudi Arabia's state-owned Petromin oil company conducted a joint feasibility study on a petrochemical project. The site chosen was in the Jubail industrial area, in the kingdom's oil-rich Eastern Province. The plant that grew out of the study became known as the Eastern Petrochemical Company, or SHARQ, the largest Japan-Saudi joint venture company of the era before being surpassed by Petro Rabigh in the 2000s.

The opportunity arose in similar fashion to the Iranian petrochemicals project described above, with the host country seeking an outlet for associated gas being flared at the wellhead.[48] Saudi officials sought to capture and make the best use of gas being flared off by Aramco, the main Saudi concession holder which, at the time, remained under the control of four US supermajors.[49]

Converting flared gas to chemical precursors was thought to be a major step towards converting the kingdom from an exporter of primary products to a more diversified industrial economy. Saudi elites saw an opportunity to add value to a domestic natural resource, create a new product for export, develop sophisticated employment for Saudis, achieve technical transfers and – with Japan's help – secure export outlets.

In December 1973, Japan's Vice Prime Minister Takeo Miki visited Saudi Arabia and made a formal proposal for economic and technical cooperation in petrochemicals[50]. For Japan, the joint venture was an opportunity to strengthen relations with a strategic oil producer and bolster the security of Japan's energy supply which was being undermined by the 1973 oil embargo, ongoing at the time of Miki's visit.

The feasibility study examined three options; petrochemicals, methanol production, and a refinery. Each was found to be unfeasible due to sharp rises in construction costs caused by the 1973 oil crisis and uncertainty about product outlets amid a stagnating world economy. However, the Saudi government was motivated to pursue the petrochemical option. The kingdom established a royal commission that promised to improve conditions so that the investment would attract Japanese investors.[51] The Saudi side suggested an "incentive crude oil system" (discussed below) as a possible inducement for Japanese participation.[52]

Control over the Saudi share of the venture shifted from Petromin[53] to the Ministry of Electricity and Industry in 1976 and then to Saudi Arabia Basic Industries Corporation (SABIC), the state-owned company then charged with promoting the kingdom's industrialization.[54]

The Japanese government saw the petrochemicals venture as a strategic opportunity and made capital available to the project from Overseas Economic Cooperation Funds. Mitsubishi proposed in 1978 that the project concentrate on producing ethylene glycol and polyethylene from ethane gas based on the company's outlook for steady and sound demand growth for the products in Japanase and Asian markets. The Saudis agreed and in 1980, an interim agreement was concluded.[55]

In May 1981 the Mitsubishi group established Saudi Petrochemical Development Co. (SPDC) as its investment company for the project.[56] With Overseas Economic Cooperation Fund (OECF) supplying 21.6 billion yen – 45% of the total capital requirements of 48 billion yen (about US$ 218 million at the time), the project officially became a "national project" in Japan.[57]

The government invited private companies outside the Mitsubishi group to participate. As a result, 66 companies, including electric power companies, oil refining and marketing companies, petrochemical companies, steel companies, car manufacturing companies and others became part-owners in the joint venture with SABIC. In 1981, the Eastern Petrochemical Company (so called "SHARQ") was established. Construction in the Jubail industrial area was complete in 1985 and[58] commercial operation started in 1987.

After various expansions, the production capacity of Eastern Petrochemical Company grew to 2.60 million tons of ethylene, 1.55 million metric tons for ethylene glycol and 1.60 million metric tons of polyethylene by 2019.[59]

At the time of writing, the Eastern Petrochemical Company remained a Saudi-Japanese joint venture, beneficiary of the second largest direct Japanese investment in Saudi industry after Petro Rabigh. The

[48] Mitsubishi Corporation (1990), "Mitsubishi Shoji Shashi" (Publication written in Japanese).
[49] Chevron (Socal), Texaco, Exxon and Mobil.
[50] Ken Koyama (ibid).

[51] The Saudi government established the Royal Commission, an organization to promote construction of infrastructure in the Al Jubail area where the project was to be located. Re-examination on feedstock prices, taxes, etc. was also made as an incentive for the project. See Mitsubishi Corporation (ibid).
[52] Mitsubishi Corporation (ibid).
[53] Petromin was established in 1968 as the future national oil company for post-nationalization Saudi Arabia, but those plans were later dropped as the more efficient Aramco was nationalized and became Saudi Aramco. Petromin's mandate changed to focus on lubricants. See: Steffen Hertog, "Petromin: The Slow Death of Statist Oil Development in Saudi Arabia," Business History 50, no. 5 (2008): 645–67.
[54] Mitsubishi Corporation (ibid).
[55] Mitsubishi Corporation (ibid).
[56] Saudi Petrochemical Development Co Ltd, a research company, was reorganized by a change in the articles of association and was changed into SPDC Ltd.
[57] Mitsubishi Corpoartion (ibid).
[58] The first phase aimed at construction of production capacity of polyethylene (130,000 metric tons) and ethylene glycol (150,000 metric tons).
[59] http://www.spdc.co.jp/english/company/sharq_summary/(November 3, 2020).

company's paid-in capital (total invested capital) of 1.89 billion Saudi riyals (US$504 million) is far greater than the US$69.3 million (SAR 260 million) invested in the third-ranked Saudi-Japan JV, the AL-RAZI methanol project.

Meanwhile, the direct benefits for Japan were less obvious. Japanese aspirations for greater supply of Saudi crude – the so-called "incentive crude" on offer in exchange for Japanese investment – never took place as envisioned. At the time of the contract signing, amid high oil prices caused by the Iranian Revolution and Iran-Iraq War, the Saudi "incentive crude" was considered as a matter of crucial importance to Japan.

However, changes in the world oil market brought an oil glut in the mid-1980s. Buyers had little difficulty in finding oil, and supply guarantees from Saudi Arabia were deemed less important. In 1986, crude production that had been associated with the JV investment stopped completely.

4.5. Sumitomo Chemical's investment in Rabigh Refining and Petrochemical Company

The final case study examines a more recent venture, the Petro Rabigh venture. Petro Rabigh dates to the early 2000s and a Saudi invitation for bidders to participate with Saudi Aramco in building and operating a refining and petrochemical complex in Rabigh, on the Red Sea coast 150 km north of Jeddah. Japan's Sumitomo Chemical won the bidding in 2004 and partnered with Saudi Aramco in the Rabigh Refining and Petrochemical Co., or Petro Rabigh[60].

Like the SHARQ plant in the Eastern Province, Petro Rabigh was aimed at economic diversification, technology transfer and employment for Saudis. For Sumitomo Chemical, the project offered potential high profits based on access to natural gas feedstock provided by Saudi Aramco at very low fixed prices.[61] Bulk gas prices in the kingdom were just US$0.75 per MMBtu until 2014.[62] The plant's products would compete on the international market with output from petrochemical players who had no such access to discounted raw materials.

Construction of the Petro Rabigh facilities started in 2006 amid very high oil market prices which spiked briefly above $140/barrel in the summer of 2008. The price swings reprised energy security fears among importing states like Japan.

Again, FDI-driven economic cooperation with Saudi Arabia was regarded as a prudent avenue for improving the security of Japanese oil supply. The Japanese government provided full support through the Japan Bank for International Cooperation and Nippon Export and Investment Insurance. In 2008, Petro Rabigh sold 25% of its shares in a public offering on the Saudi Tadawul Stock Exchange, and the shareholding structure left Sumitomo Chemical and Saudi Aramco holding 37.5% each.[63]

Petro Rabigh's first phase started operation in 2009 with capacity of 400,000 b/d of refining throughput and production of 1.3 million tons of ethylene and other plastics precursors.[64] In 2012, the partners added a new ethylene cracker and other enhancements, increasing production of high value-added chemical products, with Saudi Aramco providing additional gas and naphtha feedstock.[65]

A US$9 billion phase two expansion started up in 2017, producing complex new products intended to be used as raw materials for finished goods manufactured in the neighboring Rabigh PlusTech Park, a private industrial manufacturing zone based around Petro Rabigh's polymer output.[66] The complex around Rabigh represents a useful diversification in line with Saudi national goals.

The company puts total investment in Petro Rabigh at near US$20 billion. This contribution is now therefore the largest Japanese investments in the Middle East energy sector, surpassing those in SHARQ. For Japan, the Rabigh plant also represents a useful diversification, given the weak demand and prices in the oil market since 2014, which contrasts with much stronger global demand for plastics and its precursor chemicals.

5. The effects and impacts of Japan's FDI to the Middle East energy sectors

5.1. Conditions affecting Japan's FDI to the Middle East energy sectors

Japanese direct investment in the Middle East centered around the large projects in the Saudi-Kuwait Neutral Zone, in Iran, the UAE and Saudi Arabia itself. As the timing of the cases above show, Japanese investment interest in oil-derived projects rose during the late 1950s, continued through the 1960s and '70s, and – with the exception of liquefied natural gas development in Qatar – stagnated during the low-price 1980s and '90s. Investment interest revived alongside global oil demand and prices in the early 2000s, when Sumitomo partnered in the Petro Rabigh complex (Fig. 4, above).

The Qatar investment came about despite unrest in the region, with Japanese firms reassured by the quality and size of the Qatari natural gas reserves, relatively small Japanese ownership stakes, and the security assurances provided by enormous US military bases established on the peninsula. Japan's interest in Qatari LNG dates to 1984, but investment activity was delayed until the 1990s. In similar fashion to the projects described above, the Qatargas joint venture also retained support of the Japanese government and investment by Mitsui and Marubeni and other Japanese companies. Mitsui and Marubeni each acquired 7.5% shares of the Qatargas liquefaction plant, with various Japanese utilities signing on for long-term offtake. Some $350 million in Japanese financing helped cover construction of liquefaction trains and seven LNG tanker ships. Qatargas delivered its first cargo to Japan's Chubu Electric in 1997, and continued delivering LNG to Japan at the time of writing.[67]

Two Japanese firms attempted another upstream oil investment in Iran in 1999, involving the giant Azadegan oil field in Khuzestan province. The agreement would have created another Japan-Iran joint venture, but was derailed by increasing Iran-US animus that brought intolerable pressure on Japan, which pulled out in 2006 without having started production.[68]

Other than the Qatar project, why did Japanese investment interest stagnate during the 1980s and 1990s? Was it a factor of the easing pressure on global oil prices and supply or something unrelated? In our analysis, two major reasons contributed to the stagnant investment period. The first was indeed related to oil market issues, namely the diminished concern in Japan about the security of oil supply, given new sources of oil that began to come onstream in the 1980s. The second factor was related to the economic performance of Japanese investment

[60] Hitoshi Kurihara (2016), "Sumitomo Kagaku, Henkaku no Saudi Arabia to Rabigh Project", in http://www3.keizaireport.com/file/Mag_201607_99_SIall.pdf (November 3, 2020) (Publication written in Japanese).

[61] Hitoshi Kurihara (ibid).

[62] Jim Krane and Elsie Hung, "Energy Subsidy Reform in the Persian Gulf: The End of the Big Oil Giveaway," Issue Brief (Houston: Baker Institute for Public Policy, Rice University, April 28, 2016), http://www.bakerinstitute.org/media/files/research_document/0e7a6eb7/BI-Brief-042816-CES_GulfSubsidy.pdf.

[63] https://japan.aramco.com/en/creating-value/services/projects/petro-rabigh (November 3, 2020).

[64] https://www.sumitomo-chem.co.jp/ir/event/files/docs/201003ir_rabigh.pdf (November 3, 2020).

[65] Hitoshi Kurihara (ibid).

[66] Petro Rabigh, "About Us." (Webpage, 2017); https://www.petrorabigh.com/en/AboutPRC/WhoWeAre/Pages/ourstory.aspx.

[67] Kohei Hashimoto, Jareer Elass, and Stacy Eller, "Liquified Natural Gas from Qatar: The Qatargas Project," in Natural Gas and Geopolitics: From 1970 to 2040 (Cambridge: Cambridge University Press, 2004), 234–67.

[68] Michael Penn, "Oil and Power: The Rise and Fall of the Japan-Iran Partnership in Azadegan." The Asia-Pacific Journal. Vo. 4, Issue 12 (2006); https://apjjf.org/-Michael-Penn/2296/article.html.

in the region, and the realization that several emerging phenomena were undermining expected returns. These are covered individually below.

5.1.1. Limitations in domestic markets

The first of these economically damaging factors related to the limitations and size of domestic markets in the Persian Gulf petrostates. In the early period covered here, these countries lacked the depth to absorb large-scale direct investment. Small populations prevented Japanese investment from achieving economies of scale and contributed to inflated costs. Other market factors included the difficult economic stagnation that afflicted oil producers in the 1980s and 1990s, and the unforeseen upheaval of the Iranian Revolution and various Gulf wars. As mentioned, Japanese foreign investment interest only revived when oil prices rose again in the early 2000s. By then, populations and economic development in the Gulf had grown substantially.

5.1.2. The limited availability of a skilled labor force

Limited and inefficient labor forces in the Gulf another unforeseen drawback. Contrubitions of Gulf citizens were constrained by several factors, from legal-cultural restrictions on women in the workforce (in some countries) as well as incentives from the state – based upon rentier governance techniques – that undermined society's work ethic and created preferences for citizens to move into government or military jobs. Government incentives led Gulf citizens to avoid employment in manufacturing and other parts of the private sector.[69]

Japanese and other foreign investors in the Gulf were forced to import laborers from other countries. Even in the 1980s, the 3.9 million foreign workers then in the Gulf accounted for 65% of the total labor force in the six Gulf countries. Furthermore, the share of foreign labor in the manufacturing industries was estimated at as high as 99% in UAE, 98% in Qatar and about 70% in Saudi Arabia.[70]

Dependence on foreign workers created new costs in building dormitories and providing food and transport (although wage costs were much lower than for citizens). Very high reliance on foreign workers prevented the transfer of technical and managerial skills to citizens and the domestic economy, thwarting one of the important objectives of the investment.[71] Foreign workers on temporary contracts arrived with few skills, leaving employers to devote resources to training them, only to see workers forced to return to their home countries once their contracts expired. Constant cycles of labor force turnover and the training of unskilled new arrivals reduced productivity.

5.1.3. Factors increasing production costs

Factoring in these costs, average labor cost in the manufacturing industries in Kuwait was $13,042 per year as of 1985, which was closer to that of Japan ($18,408) than to those of Korea ($4345) or the Philippines ($1333).[72] Inflation in these economies also proved challenging. The average annual rate of increase in the wholesale price index in the Middle East was 20% during the period 1974–1985, nearly triple the OECD average (7%), and nearly double the world average of 11%.[73]

These inflationary factors often offset economic incentives from host governments, such as low energy and utility costs, and soft loans available from organizations such as the Saudi Arabian Industry Development Fund.

5.1.4. Proliferation of investment risks

Exacerbating the challenges were investment risks. These included liquidity risk (ability of a country to repay loans) and political/legal risk, including full expropriation of oil-linked businesses. The spate of nationalizations of foreign oil concessions occurred across the Middle East and developing world in the 1970s served as a major disincentive that contributed to the cautious approach of foreign investors in the Gulf. For Japan, the costly failure and liquidation of the Iran-Japan Petrochemical Co. in the wake of the Iranian Revolution and the Iran-Iraq War served as a warning to others.[74]

These four market factors – along with the softening of world oil markets in the mid-1980s – contributed to shifting Japanese FDI preferences away from the Middle East and toward North America, Europe and Asia. The exceptions such as JODCO, SHARQ and Petro Rabigh described above were driven by access to low-cost energy commodities and feedstocks, or because their output targeted the export market (mainly Japan), rather than the limited market in the Gulf.

6. Current challenges for Japan's FDI to the Middle East energy sectors

More recently, the onset of global action on climate change and the low-carbon energy transition has begun to alter the relationship between Japan and the Gulf oil producers. The potential for global oil demand to reach a peak – and begin to decline[75] – has increased the urgency in the Gulf for FDI-driven diversification, and technology-rich Japan is seen as a key potential partner.[76]

Japanese interests in oil security have broadened to include profitable investment in what have become increasingly wealthy and influential monarchies. Japanese FDI flows to Saudi Arabia and the UAE rose markedly from 2005 to 9 and again from 2014 to 18 (Fig. 6 below). At the same time, Gulf economies have eased regulations on inbound FDI. Diversification plans around the region such as Saudi Arabia's Vision 2030, have opened new sectors to foreign ownership. For instance, the kingdom began permitting 100% foreign ownership in the transport, recruitment, audiovisual and real estate industries. The UAE recently allowed 100% foreign ownership in some industries, while Qatar's recent FDI law opened nearly all sectors for full foreign ownership.[77] Of particular interest are high-skill and technology rich sectors such as ICT, digital and emerging entertainment related business, including more labor-intensive industries that can provide jobs for burgeoning citizen workforces.

Oil revenue is expected to remain an important underpinning of Gulf producer economies for decades to come. But recent history suggests that oil revenue alone cannot meet state spending requirements, particularly during periods of weak demand when global market prices remain below national "budget breakevens" and OPEC membership

[69] On oil-linked labor market distortions, see: Hazem Beblawi, "The Rentier State in the Arab World," in The Rentier State, ed. Hazem Beblawi and Giacomo Luciani (New York: Croon Helm, 1987), 85–98; Steffen Hertog, "Rent Distribution, Labor Markets and Development in High-Rent Countries," LSE Kuwait Program Paper Series (London: London School of Economics, July 2016).

[70] Haruo Ito (1993), "Chuto sanyukoku no kogyo kaihatsu" Publication written in Japanese).

[71] SSSSSSSSGuest workers in the Gulf are typically engaged on three-year contracts that force workers to return to their home countries after completion.

[72] Haruo Ito (ibid).

[73] Demand-pull inflation backed by rapid economic growth in the Middle East was brought about by sharp rises in oil revenues in the 1970s. The high inflation also increased import costs for intermediate materials and parts that were needed in production processes but not available in the domestic market due to the underdeveloped manufacturing industry base.

[74] Haruo Ito (ibid).

[75] Some analyses released in 2020 suggested the possibility that global oil demand would never return to heights achieved prior to the Coronavirus pandemic that emerged in late 2019. See: "BP Energy Outlook 2020." BP, Sept. 14, 2020 (industry forecast and report); https://www.bp.com/en/global/corporate/energy-economics/energy-outlook.html.

[76] The uncertainty around oil demand and profitability, along with the increasingly hostile relations between Saudi Arabia and Iran, may in the future render the region a less attractive destination.

[77] World Investment Report 2019, United Nations Conference on Trade and Development, June 2019 (Geneva, UNCTAD); pp 46-7; https://unctad.org/en/PublicationsLibrary/wir2019_en.pdf.

requires adhering to production cuts that require years of oil production at levels far below potential.

Saudi Arabia and some neighboring oil producers have sought economic diversification through the oil sector, mainly through investment in downstream sectors, particularly petrochemicals. In recent years, national oil companies from the Gulf have invested in refining and petrochemical plants outside the Gulf, which serve to lock-in shares of important export markets in India, China, Vietnam, Indonesia, Malaysia and elsewhere.[78]

A dual argument has become popular among oil state elites in the Middle East and beyond. On the one hand, they argue that fossil fuels will remain dominant energy sources far into the future, and that they – as low-cost (and in the Saudi case, low-carbon) producers – should remain the producers of last resort.[79] On the other, they recognize the necessity to prepare for slowing or declining demand. Gulf producers, particularly the UAE, have begun to position themselves strategically in the energy transition by investing in renewable and nuclear power generation which has the dual purpose of freeing up hydrocarbons for export and suggesting a level of adherence to global environmental aspirations.[80] In addition, Saudi Arabia, as a host country of G20 in 2020, is now very much interested in and keen to promoting the concept of "Circular Carbon Economy" in which decarbonization of fossil fuels such as oil, natural gas and coal should play an important role to reduce GHG emissions to the atomosphere in a comprehensive manner.

Oil producers have also seized upon further climate policies that target emissions without damaging the fossil fuel industry. These include promoting hydrogen (produced using natural gas) and carbon capture and storage or recycling. Potential options such as these remain long-term strategy preferences for oil producers. For Gulf producers, they also represent potential areas for foreign investment and technology transfer. In this regard, the world first-ever "blue ammonia" shipment demonstration project was launched as an collaboration project between Japan and Saudi Arabia. "Blue ammonia,"or CO2-free ammonia produced in Saudi Arabia is to be shipped to and utilized in Japan as a zero emission power generation fuel. This is an example of new Saudi-Japan cooperation.[81]

7. Conclusion

Japanese companies have been investing in Gulf energy sector since the 1950s. Early investments were given government support as "national projects" since they offered prospects for enhanced access to energy resources and lower cost energy feedstock.

The Arabian Oil Co. concession in the Neutral Zone, the JODCO concessions off Abu Dhabi, and the Ar-Razi and Sharq petrochemical plants in Saudi Arabia were key early examples of Japanese FDI securing crucial resources for Japan while providing development services to host countries in the Gulf.

The Japanese experience was nearly upended by the expensive failure of the Iran-Japan Petrochemical Co., construction of which was halted by revolution and then damaged by Iraqi aerial bombardment, leading Japan to make a costly departure. Japanese ambassadors in the region at the time discussed the difficult withdrawal of the Mitsui-led development consortium and the subsequent "Gulf-phobia" that deterred investment in the region through the late 1980s and 1990s.[82]

Other than the symbolic cases of IJPC and the Neutral Zone oil operation – the concessions of which expired without renewal – Japan's FDI remains active and in operation in the host countries. Crude oil developed by AOC and JODCO remained at the time of writing a significant source of imports.

But while the projects continue, there has emerged a growing perception that Japan's oil supply security is now affected by geopolitical and geoeconomic factors that have interrupted global oil supply and demand balances, including the coronavirus pandemic and the intensifying regional conflict between Iranian and Saudi-linked proxy forces. Japan's attempts to use FDI to acquire "equity oil" may need to be reviewed in the new and emerging global situations.

Regardless, the cases of Japanese FDI presented in this paper did enhance relations between Japan and the host countries. Even in the case of Iran, Japan's post-revolutionary links with Iran remain far stronger than those of other US-allied countries.

For the host countries, these projects did little to improve some of the economic and social problems like underemployment. The capital intensive nature of investment in the oil and gas sectors is of little direct help in providing jobs for Gulf nationals. The FDI was also of limited utility in diversifying economic structures in countries that already relied heavily on oil. In fact, the persisting oil dominance has made it difficult for these countries to build manufacturing sectors. The lack of economic diversity now limits FDI opportunities, despite Japanese willingness to cooperate those diversification initiatives. But climate change and post-pandemic global situations may accelerate the speed of economic transition in oil producing countries in the region, which can be a new driver to seek and promote FDI and economic cooperation with Japan.

Author statement

Ken Koyama, the corresponding author of the paper, "Energy Security through FDI: The legacy of Early Japanese Investment in the Oil Sectors of the Persian Gulf', ensures that the below descriptions are accurate and agreed by Jim Krane, the co-author of the paper.

CRediT authorship contribution statement

Ken Koyama: Conceptualization, Methodology, Writing – original draft. **Jim Krane:** Writing – review & editing.

[78] Jim Krane, "A Refined Approach: Saudi Arabia Moves beyond Crude," Energy Policy 82 (2015): 99–104.

[79] Jim Krane, "Last Man Standing: Saudi Aramco and Global Climate Action," in Saudi Domestic Policy Workshop (Gulf Research Meeting, Cambridge: Gulf Research Center, 2019).

[80] Bassam Fattouh, Rahmat Poudineh, and Rob West, "The Rise of Renewables and Energy Transition: What Adaptation Strategy for Oil Companies and Oil-Exporting Countries?," Academic paper (Oxford: Oxford Institute for Energy Studies, 2018), https://www.oxfordenergy.org/wpcms/wp-content/uploads/2018/05/The-rise-of-renewables-and-energy-transition-what-adaptation-strategy-for-oil-companies-and-oil-exporting-countries-MEP-19.pdf.

[81] https://eneken.ieej.or.jp/en/press/press200927_en.pdf (November 3, 2020).

[82] Makio Yamada, "Gulf-Asia Relations as 'Post-Rentier' Diversification? The Case of the Petrochemical Industry in Saudi Arabia," Journal of Arabian Studies 1, no. 1 (2011): 99–116.