

Nuclear Nonproliferation and Economic Sanctions: Can Non-Military Sanctions Stop Nuclear Proliferation?*

Sukeyuki Ichimasa**

Abstract

While the spotlight has focused on multilateral economic sanctions in the post-Cold War era as a non-military means of exercising force by the United Nations, there has been a long history of unilateral economic sanctions by individual states exercising their powers on international politics in order to satisfy their national interests and security needs. Regarding the nuclear issues of North Korea and Iran, various discussions have been raised for many years over the roles and effects of international economic sanctions. Unilateral economic sanctions have been undertaken since the 1970s against concerns about the proliferation of nuclear weapons. Among them are cases in which economic sanctions succeeded, such as South Korea and Taiwan, and eventually nuclear nonproliferation as a foreign policy objective was realized. However, in many cases, there is a historical reality that nuclear nonproliferation cannot be achieved only by such economic sanctions. From the examples of sanctions against North Korea and Iran, there have emerged not only issues of political coordination among the countries concerned, but also a various political considerations. These include engagement by “gatekeepers,” who have influence on the targeted countries, the shifting “breakout” status of nuclear development of targeted country, the establishment of policy objectives to be achieved by economic sanctions, and the cost to be accepted for imposing sanctions, including a possible transition to military sanctions. Under these circumstances, the value and importance of the multilayered nonproliferation framework consisting of the historic nuclear non-proliferation regime and export control on weapons of mass destruction must be re-evaluated.

Introduction

From the Cold War period to the present day, the international community has responded to the proliferation of nuclear weapons by constructing various institutional frameworks. The foundation of its multilateral framework was the existence of a Nuclear Non-Proliferation Treaty (NPT) that had the second largest number of signatories after the UN Charter. In addition, the International Atomic Energy Agency (IAEA, also known as the “Nuclear Watch Dog”) has been responsible for verification to realize such international norms of nuclear nonproliferation by NPT Safeguards and its Additional Protocol. On the other hand, the Nuclear Suppliers Group (NSG) plays an important role as a form of export control. Looking more broadly towards export control of weapons of mass

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** Senior Fellow, Policy Studies Department, Defense Policy Division.

destruction (WMD) other than nuclear weapons, there are more lenient “gentlemen’s agreements.” Typical examples include the Australia Group (AG) concerning biological and chemical weapons and the Missile Technology Control Regime (MTCR). Since 2003, led by the United States, the Proliferation Security Initiative (PSI) has been implemented as a coalition of the willing. It has played a major role to counter proliferation, mainly through maritime interdiction operations that prevent the horizontal proliferation of nuclear weapons and other WMD related items. In addition, new approaches¹ to non-proliferation are emerging, such as United Nations Security Council (hereinafter referred to as UNSC) resolution 1540 (2004) that seeks to create effective multilateral norms that are binding on all member countries under Chapter 7 of the UN Charter.

Meanwhile, there is a growing tendency in recent years for the UNSC to adopt resolutions accompanied by economic sanctions regarding the proliferation of WMDs. This includes the focus of this study: the nuclear tests, nuclear proliferation, and ballistic missile launches by North Korea and the uranium enrichment activities of Iran, a long-running nuclear issue regarding which the Joint Comprehensive Plan of Action (JCPOA) was adopted in 2015. In the cases of both North Korea and Iran, a series of UNSC resolutions have been adopted since 2006. These UNSC resolutions under Chapter 7 of the UN Charter confirmed North Korea’s nuclear tests and ballistic missile launches and Iran’s controversial uranium enrichment activities as threats against international peace and security. As a result, North Korea and Iran’s nuclear problems have remained issues of concern in the international security field for nearly a decade.

During this period, in addition to economic sanctions based on UNSC resolutions, concerned states imposed their own unilateral economic sanctions. One aspect of unilateral economic sanctions is that they have been prominent economic weapons for achieving foreign policy goals throughout the history of international relations.² Moreover, not all of them have been in alignment with the economic sanctions imposed by the UNSC, even within the context of nuclear non-proliferation. The focus, duration, and other conditions of unilateral sanctions varied depending on the targeted country and individual circumstances, and their effectiveness and justifiability itself cannot be considered as one. However, there are certain aspects to unilateral sanctions that are worthy of consideration. Namely, they shed light on the significance of the various economic sanctions that continue to be levied today on both North Korea, which continues to engage in military provocations and nuclear development, and the economic sanctions that were imposed on Iran in the process leading to JCPOA.

This paper focuses on economic sanctions based on UN resolutions including the concept known as “smart sanctions,” and considers the theory and background of economic sanctions while referring to previous research. Next, this study examines cases of historical economic sanctions imposed for nuclear non-proliferation purposes and policy implications for the targeted countries. In consideration of economic sanctions against nuclear problems imposed on Iran and North Korea and their policy implications, this paper points out future prospects and issues to be discussed on economic sanctions aimed at preventing the spread of nuclear weapons.

¹ Sukeyuki Ichimasa, “WMD Hukakusan to Kokuren Anpori ni yoru Kihan no Keisei: Gabanansuron no Shiza kara [WMD Non-Proliferation and the Development of Norms by the UN Security Council: From the Perspective of Governance Theory],” *Kokusai Seiji* [International Relations] No.155, 2009, pp.61-62.

² Miki Honda, *Kokuren ni yoru Keizaiseisai to Jindoujou no Shomondai* [Sanctions by the United Nations and humanitarian issues], Kokusai Shoin, 2013, p.3.

1. Economic Sanctions and Smart Sanctions

(1) Economic Sanctions Matching Policy Objectives

Since the Cold War era, use of economic sanctions as an exercise of non-military power, primarily by the UN, has often come under the spotlight of international politics. Economic sanctions are generally interpreted as a means to be invoked based on international norms. However, according to Miki Honda,³ who conducted a wide-ranging case study in this field, the conditions of sanctions can be broadly divided into three categories: (a) a country sets its own rules and conducts economic sanctions, (b) an international organization determines rule infractions but the implementation of economic sanctions is conducted at the discretion of individual countries, and (c) an international organization determines rule infractions and implements economic sanctions. Category (a), as the name “unilateral sanctions” that this study gives it indicates, means the exercise of influence based on the national interests and security needs of the country implementing the sanctions. They have become increasingly frequent since the end of WWI and include the vast majority of the economic sanctions conducted in the past. The United States in particular has imposed economic sanctions in over 170 cases and is seen as the greatest purveyor of category (a) sanctions. Categories (b) and (c) have been implemented by international organizations, from the League of Nations to the United Nations, as non-military measures to encourage the peaceful resolution of disputes without resorting to force; these came to be established under international law, according to Honda.⁴ In considering the relative weight of (a), (b), and (c), the fact that there were only 14 cases of multilateral economic sanctions conducted by the United Nations between 1990 and 2002 but more than 50 cases of economic sanctions by the United States and the European Union (EU) during the same period⁵ is striking as a stark display of the realities of contemporary economic sanctions.

According to an analysis by Gary Clyde Hufbauer et al, known for their statistical study of economic sanctions, the success rate of economic sanctions generally varies widely depending on the type of their policy objectives⁶ (see Table 1). In this case, since there are no public standards to determine the success or failure of sanctions, Hufbauer et al conduct qualitative case-study evaluation of the roles played by sanctions in achieving policy objectives and objective evaluations through the collection and analysis of episodes of specific individual sanctions.⁷ Meanwhile, David Cortright and George A. Lopez, who have also produced many studies on economic sanctions, raise as historical conditions for the achievement of policy objectives by sanctions (a) the case where the economic cost to the targeted country of the sanctions surpasses 2% of its gross national product (GNP), (b) the case where there is a large disparity in the size of the national economies between the side imposing the sanctions and the targeted country (around 10 to one in GNP terms), (c) the case where the side implementing the sanctions has a high trade concentration in the targeted country (25% or higher), and (d) the case where swift, strict, and complete cooperation by the

³ Honda, *ibid.*, pp.35-40.

⁴ Honda, *ibid.*, p.40.

⁵ David Cortright and George A. Lopez, “Introduction: Assessing Smart Sanctions: Lessons from the 1990s,” in David Cortright and George A. Lopez, eds., *Smart Sanctions: Targeting Economic Statecraft*, Rowman & Littlefield Publishers, 2002, p.1.

⁶ Gary Clyde Hufbauer, et al., *Economic Sanctions Reconsidered 3rd edition*, Peterson Institute for International Economics, 2007, pp.49-50.

⁷ *Ibid.*

Table 1 Economic Sanctions Matching Policy Objectives and Their Success Rates

Policy Goal	Success cases	Failure cases	Total / Success ratio
Modest policy changes	22	21	43/(51)
Regime change and democratization	25	55	80/(31)
Disruption of military adventures	4	15	19/(21)
Military impairment	9	20	29/(31)
Other major policy changes	10	23	33/(30)
All cases	70	134	204/(34)

Source: Gary Clyde Hufbauer, et al., *Economic Sanctions Reconsidered 3rd edition*, Peterson Institute for International Economics, 2007, p.159.

trading partners of the targeted country that may evade the sanctions can be secured among others.⁸

Regarding economic sanctions intended for the purpose of demanding policy changes in specific areas by the targeted country, it is true that many voices expressed skepticism at their effectiveness when they received attention as a peaceful means to resolve conflicts at the time of the League of Nations (the post WWI interwar period).⁹ Furthermore, a point that can be made about any economic sanctions, either by individual countries or multilateral, is that there is an important statistical difference in the outcome between cases where sanctions are conducted as part of coercive diplomacy by showing the resolve that military sanctions will be resorted to depending on the response from the targeted country and cases where the economic sanctions are intended to encourage change in the policy of the targeted country but there is no intention whatsoever to switch to military sanctions.¹⁰ This issue has a serious policy implications, namely that when imposing economic sanctions on a targeted country whose nuclear program has reached “breakout,” i.e. cleared the technological hurdles for developing nuclear weapons, such as North Korea today or India and Pakistan in the second half of the 1990s, the parties imposing the sanctions will face the question of whether they are prepared to pay significant costs (switch to military sanctions) or not depending on the course of events.

The sanctions around Bosnia are a case where military and economic sanctions were imposed in a mutually reinforcing manner. On the other hand, in Haiti and Iraq, economic sanctions were first imposed; however, this was followed by a switch to military sanctions when economic sanctions failed.¹¹ According to Ernest H. Preeg, generally, unlike military sanctions, economic sanctions neither create risks to human life nor impose fiscal costs on those imposing them, yet they tend to be perceived politically as “taking action.” However, the reality is that they cannot be seen as an effective means of diplomacy for achieving policy goals and are criticized as potentially

⁸ George A. Lopez and David Cortright, “Economic Sanctions in Contemporary Global Relations,” in David Cortright and George A. Lopez, eds., *Economic Sanctions: Panacea or Peacebuilding in a Post-Cold War World?* Westview Press, 1995, p.9.

⁹ Drew Christensen, S.J. and Gerald F. Powers, “Economic Sanctions and Just-War Doctrine,” in David Cortright and George A. Lopez, eds., *Economic Sanctions: Panacea or Peacebuilding in a Post-Cold War World?* Westview Press, 1995, p.97.

¹⁰ Bob Carbaugh, “Sanctions and Nuclear Proliferation,” VOX CEPR’s Policy Portal, 23 February 2009, www.voxeu.org/article/sanctions-and-nuclear-proliferation.

¹¹ Ernest H. Preeg, *Feeling Good or Doing Good with Sanctions: Unilateral Economic Sanctions and the U.S. National Interest*, The CSIS Press, 1999, p.217.

producing results that are actually contrary to national interests. For example, they could lead to losses caused by the decrease of exports and investment from the country imposing sanctions to the targeted country, undesirable effects on third party markets other than the targeted country, and the reduction of business opportunities.¹²

(2) Smart Sanctions by the United Nations

Economic sanctions have been often used in the United Nations as convenient, non-military measures, particularly after the end of the Cold War in the second half of the 1990s. Symbolizing such sanctions, the term “smart sanctions” is often used. The term itself has been used mainly by researchers; the actual UN documents usually use expressions such as “targeted sanctions” and “selective sanctions.”¹³ The economic sanctions imposed by the United Nations have been formulated as smart sanctions in recent years. Specifically, they are a convergence of measures such as financial sanctions, sanctions on specific commodities, restrictions and prohibitions on travel, and prohibition on trade in arms.¹⁴ Furthermore, the United Nations Secretariat is striving to formulate effective sanctions by collecting the results in countries targeted by sanctions from individual cases of the implementation of economic sanctions.¹⁵ Of course, in addition to the smart sanctions, which are currently being formulated, other long-used approaches include diplomatic sanctions and internal sanctions. Diplomatic sanctions involve the principles of non-recognition, such as withholding diplomatic and consular relationships, non-application of treaties, withholding aid and support, and condemning and protesting actions and moral sanctions by approaching other countries and evoking public opinion. On the other hand, internal sanctions by international organizations involve acts such as expulsion of the target state from international institutions.¹⁶ There are also examples of the application of various restrictions targeting military personnel and persons handling dual use material and equipment as examples of economic sanctions targeting the military field, in addition to the aforementioned prohibition on trade in arms.¹⁷

Joseph Stephanides details the background of these smart sanctions, including how they were devised on the basis of reflection after it was exposed that the comprehensive UN sanctions on Iraq had had a negative humanitarian impact during the second half of the 1990s. He further explains that the UNSC is extracting many results and lessons from these examples of imposing sanctions and conducting a constant review of sanction designs. The UNSC is also committed to expending resources and energy to ensure that smart sanctions are implemented effectively

¹² Ibid., pp.217-218.

¹³ Miki Honda, *Kokuren ni yoru Keizaiseisai to Jindoujou no Shomondai* [Sanctions by the United Nations and humanitarian issues], Kokusai Shoin, 2013, p.25.

¹⁴ See the following for an example. Kimberly Ann Elliot, “Analyzing the Effects of Targeted Sanctions,” in David Cortright and George A. Lopez, eds., *Smart Sanctions: Targeting Economic Statecraft*, Rowman & Littlefield Publishers, 2002, pp.172-175.

¹⁵ David Cortright and George A. Lopez, “Introduction: Assessing Smart Sanctions: Lessons from the 1990s,” in David Cortright and George A. Lopez, eds., *Smart Sanctions: Targeting Economic Statecraft*, Rowman & Littlefield Publishers, 2002, pp.10-15.

¹⁶ Miki Honda, *Kokuren ni yoru Keizaiseisai to Jindoujou no Shomondai* [Sanctions by the United Nations and humanitarian issues], Kokusai Shoin, 2013, p.40.

¹⁷ Bernard Sitt, et al., “Sanctions and Weapons of Mass Destruction in International Relations: International Group on Global Security IGGS,” Geneva Centre for Security Policy, 2010, www.cesim.fr/documents/publications/geneva_paper_16.pdf, p.129.

and not causing unintended consequences in the targeted countries.¹⁸ Looking at recent cases of comprehensive sanctions, an approach that is taken in tandem with smart sanctions, there have been only two additional cases in the 1990s (other than the case of Iraq) that widely attracted criticism for their negative impact from a humanitarian perspective. These cases targeted Haiti (1993-1994) and Yugoslavia (currently Serbia and Montenegro, 1992-1995). Cortright and Lopez attribute the extent of the widespread use of smart sanctions to the fact that not only is the humanitarian impact alleviated significantly by targeted economic sanctions but that the coercive effect on the elites, businesses, and other entities involved in policy decision makers is further bolstered, thereby enhancing the political effectiveness of the sanctions.¹⁹ He argues that in imposing smart sanctions, what is important is not only whether the sanctions will be implemented accurately by UN member countries, whether there is a political impact, and what the humanitarian impact is, but also the accuracy of the strategic design of the sanctions and the nature of targeting.²⁰

Also, as the fundamental premise to these arguments, it is necessary to be aware that history tells us that the implementation of sanctions alone will not necessarily achieve the political objective and that there will be many cases where the economic sanctions will be effective only if combined with other policy measures.²¹ The variety of sanction measures that policy objectives call for, such as moderate changes in policy objectives, regime change and democratization, deterring military ventures, military deterrence, and other major policy changes, are intended to provide a “carrots and sticks” process for deals. On this point, Cortright and Lopez cite the assurance that the sanctions will be lifted as the most important incentive in negotiating a deal with the targeted country expeditiously.²² They go on to emphasize that sanctions are a tool for persuasion, not punishment, and their purpose is to create a sense of economic isolation and use that as the impetus to promote dialogue and negotiations with the country targeted by the sanctions, not to inflict economic damage.²³

It should be noted regarding these points that there are arguments completely to the contrary. Kern Alexander points to the existence of three historical models, broadly speaking, for economic sanctions imposed independently by states: retortive measures, countermeasures/reprisal, and punitive sanctions. These models represent examples from history where states have taken measures that are not necessarily efficient or even rational for achieving the objective announced when imposing sanctions.²⁴ One should bear in mind the fact that non-military measures are not

¹⁸ Joseph Stephanides, “Forward,” in David Cortright and George A. Lopez, eds., *Smart Sanctions: Targeting Economic Statecraft*, Rowman & Littlefield Publishers, 2002, p.vii.

¹⁹ David Cortright and George A. Lopez, “Introduction: Assessing Smart Sanctions: Lessons from the 1990s,” in David Cortright and George A. Lopez, eds., *Smart Sanctions: Targeting Economic Statecraft*, Rowman & Littlefield Publishers, 2002, pp.2-3.

²⁰ Ibid. According to Cortright and Lopez, when considering the strategic objectives of smart sanctions, there are some basic conditions that must be considered, i.e. questions about the policy framework such as whether the objective of the sanctions are realistic goals, will the sanctions be widely justified and authoritative measures, whether the standards of the sanctions decided are sure to be implemented, and so on.

²¹ Ivan Eland, “Economic Sanctions as Tools of Foreign Policy,” in David Cortright and George A. Lopez, eds., *Economic Sanctions: Panacea or Peacebuilding in a Post-Cold War World?* Westview Press, 1995, p.31.

²² David Cortright and George A. Lopez, “Introduction: Assessing Smart Sanctions: Lessons from the 1990s,” in David Cortright and George A. Lopez, eds., *Smart Sanctions: Targeting Economic Statecraft*, Rowman & Littlefield Publishers, 2002, pp.6-16.

²³ Ibid.

²⁴ Kern Alexander, *Economic Sanctions: Law and Public Policy*, Palgrave Macmillan, 2009, pp.58-65.

necessarily effective or efficient in achieving objectives within the purview of the high politics of international security, such as nuclear non-proliferation.

Then which produces more desirable outcomes, unilateral sanctions by individual states or multilateral sanctions based on UNSC resolutions? A country imposing unilateral sanctions does not necessarily have to go at it alone; there is a certain range of policies and freedom, such as requesting the cooperation of allies and partners. At the same time, when certain major powers are reluctant to adopt economic sanctions but they cannot be ignored given their impact on the targeted country, it is possible that the constructive engagement of the respective countries through multilateral sanctions may have a greater effect. In order to decide whether to impose unilateral or multilateral sanctions, it goes without saying that the circumstances of the targeted country will be an important factor. Meanwhile, Alexander points out that with exception of a few situations (economic sanctions against Cuba, Iran, and Myanmar), when more powerful multilateral sanctions are imposed, many unilateral sanctions are already being conducted against the targeted countries and, in recent years, the suspension of such existing sanctions has triggered the transition to the implementation of multilateral sanctions.²⁵

Of course, there often is the possibility that individual sanctions will impose measures that are more onerous for the targeted country but are difficult to achieve as multilateral sanctions. However, generally speaking, the impact of multilateral economic sanctions is large, and it is possible in principle to seek a certain measure of engagement from all UN member countries with economic sanctions based on UNSC resolutions. Furthermore, if humanitarian concerns for the targeted country are taken into consideration in the form of smart sanctions, it makes sense that multilateral economic sanctions are expected to achieve more effective results.

2. Economic Sanctions for Nuclear Non-Proliferation

(1) History of Unilateral and Multilateral Economic Sanctions on Nuclear Proliferation

In regard to economic sanctions for nuclear non-proliferation, which is the focus of this paper, when this study examines past examples using the aforementioned database created by Hufbauer et al, a number of sanctions worthy of note came to light. These include sanctions imposed by Canada on India and Pakistan, in response to the two countries' efforts to acquire reprocessing capacities for spent nuclear fuel and designed to stop them from developing nuclear weapons (both 1974); those imposed by the United States and Canada on South Korea to prevent its purchase of a nuclear fuel reprocessing plant (1975); and those imposed by the United States on South Africa regarding the export of nuclear fuels and related technology (1975). The United States also implemented unilateral economic sanctions for the sake of nuclear non-proliferation, targeting Taiwan (1976), Brazil (1978), Argentina (1978), India (1978), and Pakistan (1979) in order to demand that nuclear facilities be placed under an appropriate multilateral verification system or to stop the acquisition of technology that contributes to the development of nuclear weapons. However, in only two of the aforementioned cases (South Korea and Taiwan) was the expected outcome regarding nuclear non-proliferation ultimately achieved.²⁶ If the scope is broadened to include WMD non-proliferation,

²⁵ Ernest H. Preeg, *Feeling Good or Doing Good with Sanctions: Unilateral Economic Sanctions and the U.S. National Interest*, The CSIS Press, 1999, pp.215-216.

²⁶ Gary Clyde Hufbauer, et al., *Economic Sanctions Reconsidered 3rd edition*, Peterson Institute for International Economics, 2007, p.12.

Iraq and Libya can be included as successful cases.²⁷ As for nuclear weapon development by India and Pakistan, not only were the unilateral sanctions by the United States unable to prevent these two countries from joining the so-called “nuclear weapons club,” but threats of sanctions by the United Nations were also unsuccessful.²⁸

Another important issue to be considered in the efforts by the international community to promote non-proliferation is the factors that influence decision making regarding nuclear weapons development. Take a look at the cases of Iran (until 2015 when JCPOA was concluded) and North Korea, the countries that have been most-recently targeted by economic sanctions for the purpose of nuclear non-proliferation. First, Iran is a highly market-dependent oil exporter that exists under a democratized political system with religious leaders and political leaders as well as multiple domestic political factions. As a result, there were ample opportunities for the domestic political situation to influence negotiations with the international community. North Korea, on the other hand, is under a closed, and despotic political system with an extremely low reliance on the international market; the national regime barely gets by with support from its only ally, China.²⁹ In light of the view of Hufbauer et al that “the effect of economic sanctions on despotic systems tends to be relatively small, and, in general, the effect of economic sanctions is weaker on states that are hostile and despotic,”³⁰ North Korea is a typical example of a target country on which it is difficult for sanctions to be effective. This is unlike Iran, with which negotiations could be conducted using economic sanctions as leverage. To elaborate on this point, it has recently been argued that renewed attention should be paid to the presence of so-called “gatekeepers,” i.e. countries that are key to economic sanctions and the implementation of export controls, and the role they should play.³¹ Thus, an inherently convincing argument is that securing the engagement of China and Russia, the gatekeepers for North Korea and Iran, respectively, is important for enhancing the effect of economic sanctions.

Another point that should be considered is the possibility that the existence of structural disparity between nuclear states with their nuclear monopoly as the “haves” and the non-nuclear states as the “have-nots” has made challenging nuclear non-proliferation as the international norm attractive to some states.³² In this narrative of the challenge against the “haves,” in the case of Iran, there is the existence of Israel, the only de facto nuclear weapon state in the Middle East; for North Korea, there is the existence of the U.S.-ROK alliance, which it has confronted for decades across the northern latitude 38° line. In either case, it can be said that Israel and the United States have impacted the targeted countries Iran and North Korea respectively in ways large and small

²⁷ Ibid., p.12.

²⁸ Ibid., pp.12-13.

²⁹ From the discussions at the Study Group concerning Sanctions around North Korea and Iran Imposed by Various Countries (internal study group National Institute for Defense Studies in FY2015) held by Sukeyuki Ichimasa, Ikuya Kozuka, and Takeshi Watanabe.

³⁰ Gary Clyde Hufbauer, Jeffrey J. Schott, Kimberly Ann Elliot and Barbara Oegg, *Economic Sanctions Reconsidered 3rd Edition*, Peterson Institute for International Economics, 2007, p.61.

³¹ Shuji Sue, *Kakukakusan to Keizaiseisai* [Nuclear Proliferation and Economic Sanctions], National Institute for Defense Studies International Relations Study Group, November 4, 2015.

³² Sukeyuki Ichimasa, “*Gunbikanri, Gunshuku, Hukakusankoushou to Kokuren Shisutemu: Kakuheiki wo Meguru ‘Motetu Mono’ to ‘Motazaru Mono’ no Kouzoumondaai he no Ithikousatsu* [Negotiating Arms Control, Disarmament and Non-Proliferation and UN System: An Essay on Structural Collision between Haves and Have-nots of the Nuclear Weapons],” *Kokuren Kenkyuu* [The United Nations Studies] No.10, 2009, p.169.

through their posture on economic and military sanctions from the policy rhetoric level to the actual implementation of the sanctions.

Finally, it should be noted that there was a significant gap in the technological development stage of nuclear weapons between Iran and North Korea in 2006, when the UNSC adopted resolutions to sanction the two countries. North Korea had been suspected of secretly building nuclear facilities and separating plutonium since the 1990s,³³ and its exchanges with the underground nuclear network revolving around Pakistan (the so-call Kahn (A.Q. Kahn) network) had long been a matter of concern.³⁴ When North Korea conducted its first nuclear test in 2006, it could be said that it had already passed the “breakout” stage of nuclear development. Ten years have gone by since then, and by September 2017, North Korea has conducted six underground nuclear tests, including a thermonuclear weapon test as well as multiple ballistic missile tests, and announced that it had developed an intercontinental ballistic missile (ICBM) with a range of over 5,500 km.

In the case of Iran, problems arose in 2002 when an antigovernment organization exposed the construction of nuclear development facilities, and the Iranian government, urged by the United Kingdom, Germany, and France, filed a revised report the following year to the IAEA to the effect that it had clandestinely conducted uranium enrichment tests and extracted a small amount of plutonium.³⁵ UNSC resolution 1696 was adopted in 2006, the same year as the resolution on North Korea, based on which economic sanctions are being imposed on Iran. However, as Table 2 below notes with regard to the content of the resolution, it “imposes the obligation to suspend all uranium enrichment and reprocessing-related activities including research and development.” Since then, after negotiations with the international community, which continued under economic sanctions, Iran agreed to the JCPOA in July 2015, which ensures that its nuclear activities are for peaceful purposes, before it reached “breakout” in nuclear development.³⁶

This should show that there is a fundamental difference in the current policy goals of North Korea and Iran. One example of this difference is that while North Korea is pursuing the development and mass production of operational nuclear weapons that can be boasted of as a nuclear deterrent force, Iran remains within the scope of the peaceful use of nuclear power while possessing a “virtual nuclear force.”³⁷ Although detecting and verifying signs of nuclear proliferation is in itself a difficult challenge technically and politically, it must be said that the timing of the implementation of sanctions against nuclear development is the most important aspect for achieving nuclear non-proliferation.

³³ David Albright, *Peddling Peril: How the Secret Nuclear Trade Arms America’s Enemies*, Free Press, 2010, p.155.

³⁴ Masakatsu Oota, *Atomikku goosuto* [Atomic Ghosts], Kodansha, 2008, p.25; Gordon Corera, (trans., Nabiko Suzuki), *Kaku wo Urisabaita Otoko: Shi no Bijinesu Teikoku wo Kizuita Dokutaa Kaan no Shinjitsu* [Shopping for Bombs], Business-sha, 2007, pp.145-172.

³⁵ Kinichi Komano, *Henbousuru Iran: Isuraamu Kyouwakoku Taisei no Shisou to Kakugiwaku Mondai* [Metamorphosing Iran: The Ideology of the Islam Republic and the Issue of Nuclear Suspicion], Akashi Shoten, 2014, pp.160-161.

³⁶ “Joint Comprehensive Plan of Action,” July 14, 2015, <http://www.state.gov/documents/organization/245317.pdf>.

³⁷ Sukeyuki Ichimasa, “*Kasouteki Kakusenryoku Gainen to ‘Kauheiki no Nai Sekai* [The Concept of Virtual Nuclear Arsenals and ‘a World without Nuclear Weapons’],” *Boueikenkyo Kiyou* [NIDS Journal of Defense and Security], Vol.14, No.1, 2011, p.27.

(2) Various Phases of Economic Sanctions against North Korea and Iran on the Nuclear Issue

Between 2006 and 2017, the United Nations has adopted eight resolutions (S/RES/1718, S/RES/1874, S/RES/2087, S/RES/2094, S/RES/2270, S/RES/2321, S/RES/2371, and S/RES/2375) based on Chapter 7, Article 41 of the UN Charter imposing sanctions on North Korea, demanding the disposal of its continued nuclear weapons development program and nuclear weapons in a complete, verifiable, and irreversible manner, as well as self-restraint on its ballistic missile launches. Resolutions 1718 (2006) and 1874 (2009) were adopted against the first and second nuclear tests, resolution 2087 was adopted in December 2012 against North Korea's ballistic missile launch, which it claimed to be a satellite launch, and resolution 2094 was adopted against North Korea's third nuclear test in February 2013. In 2016, resolution 2270, adopted in March condemning a fourth nuclear test as well as missile launches, and resolution 2321, adopted in November condemning North Korea's fifth nuclear test, both significantly expanded the scope of the sanctions binding all UN member countries based on resolution 1718. Resolution 2371 (August 2017), which was adopted amid the increasingly aggressive military provocations from North Korea and more immediately in response to its July 3 and 28 ballistic missile launches,³⁸ is worthy of note as a new approach. Specifically, it took aim at North Korea's foreign exchange revenue, which had escaped sanctions up until then, by focusing on seafood, minerals, and migrant workers, among others. Moreover, in the consultations for resolution 2375, which was adopted in response to the sixth nuclear test on September 3, 2017, the U.S. Trump administration is said to have put its full force behind the proposed resolution. The administration announced beforehand that it would support the most powerful sanctions and expressed its aims in the draft speech,³⁹ referencing items such as the suspension of oil supplies and prohibition of the employment of North Korean workers. The resolution that ended up being adopted⁴⁰ included prohibition of textile imports from North Korea and suspension of work authorizations for North Korean nationals, but, due to opposition from China and Russia, the supply of oil to North Korea, which had received much attention, was merely "restricted." Moreover, another issue that is worthy of note is that the resolution did not designate North Korean leader Kim Jong Un and other members of the North Korean leadership as subjects of the sanctions, though it did freeze the assets of the three most important organizations in North Korea: the Organizational Guidance Department, Central Military Commission, and Propaganda and Agitation Department.

Meanwhile, it is interesting to look back at the initial stages regarding North Korea and UNSC resolutions 1718 and 1874, when it was pointed out that the resolutions had a dual role as normative measures and as practical measures prohibiting ballistic missiles and the nuclear program.⁴¹ Particularly with regard to the latter, whose subject was ballistic missiles, Asada explains with regard to halting all activities concerning the programs (as decided) and refraining from launches using ballistic missile technology (demand) that it is difficult as a matter of logic to

³⁸ S/RES/2371 (2017), unscr.com/en/resolutions/2371.

³⁹ "US Proposes UN Resolution to Ban Oil Exports to North Korea," CNN, September 6, 2017, edition.cnn.com/2017/09/06/politics/us-un-resolution-north-korea/index.html.

⁴⁰ "FACT SHEET: Resolution 2375 (2017) Strengthening Sanctions on North Korea," United States Mission to the United Nations website, September 11, 2017, usun.state.gov/remarks/7969.

⁴¹ Masahiko Asada, "Shiten [1] Kokuren ni yoru Kitachousen Seisai to Yushutsu Kanri [Perspective 1: UN Sanctions on North Korea and Export Controls]," *CISTEC Journal*, January 2011, p.14.

consider only “halting all activities concerning the projects (as decided)” as a legal obligation.⁴² As for the nuclear program, North Korea had violated UNSC resolutions in two ways by not returning to the NPT and by implementing a nuclear program in violation of its obligations as a signatory to the NPT, making it necessary for North Korea to comply with demands from the international community by the “teeth” of sanctions.⁴³ However, there was also persistent criticism that the sanctions have not stopped the development of ballistic missiles with ranges capable of reaching North America as well as submarine-launched ballistic missiles, not to mention the development and possession of nuclear weapons.⁴⁴ It cannot be denied that some of this criticism is warranted, given North Korea’s aggressive efforts today to develop nuclear weapons and their means of delivery.⁴⁵ At the same time, this example of North Korea has cast a renewed spotlight on the difficulties of impeding the actions of a sovereign state that earnestly pursues proliferation with non-military sanctions when its capability has surpassed the breakout point. In any case, there is no denying that the future direction of the series of UNSC resolutions regarding North Korea’s nuclear program will have a significant effect on the future direction of nuclear non-proliferation.

Incidentally, some of the analysis on the sanctions against North Korea based on UNSC resolutions identifies a tendency for additional, more powerful sanctions against the sanctioned country to be imposed once sanctions are implemented in the first place. Furthermore, such sanctions are positively evaluated for raising international awareness and concern over North Korea’s nuclear issue, even if the effect of the sanctions themselves remains limited.⁴⁶ UNSC resolutions 2371 and 2375 reinforce the first point. Moreover, as an illustration of their effectiveness in raising international awareness, there has been a series of countries such as Peru, Kuwait, Mexico, and Spain designating North Korean ambassadors as persona non grata around the time of resolution 2375 for reasons such as the violation of UNSC resolutions by launching ballistic missiles.⁴⁷ These sanctions can be said to be having a stronger effect, boosted by U.S. intentions aiming at strengthening sanctions against North Korea and even drilling down into diplomatic relations.

The Arms Control Association, well-known in the nuclear non-proliferation and disarmament field, had been critical of the effectiveness of sanctions against North Korea, arguing that while it recognized that the series of sanctions under UNSC resolutions did have the effect of delaying the speed of North Korea’s nuclear weapons and ballistic missile program, these efforts to effectively

⁴² Asada, “*Shiten [II]*,” p.15.

⁴³ Asada, “*Shiten [II]*,” p.15-16.

⁴⁴ Emma Chanlett-Avery, Ian E. Rinehart and Mary Beth D. Nikitin, “North Korea: U.S. Relations, Nuclear Diplomacy, and Internal Situation,” *CRS Report for Congress*, January 15, 2016, p.3.

⁴⁵ Alex Beuge, Pablo Gutiérrez, Cath Levett, Finbarr Sheehy and Paul Torpey, “A Guide to North Korea’s Advance toward Nuclear Weapons – in Maps and Charts,” *The Guardian*, September 11, 2017, www.theguardian.com/world/2017/sep/11/how-has-north-koreas-nuclear-programme-advanced-in-2017.

⁴⁶ Mitsubishi UFJ Research and Consulting Co., Ltd., *Itaku Chousa Anporiketsugi in yoru Keizaiseisai: Seisai ni Itaru Jijou, Naiyou, Kouka tou no Oudanteki Hikakubunseki* [Consigned Survey Economic Sanctions under UNSC Resolutions: Crosscutting Comparative Analysis of the Circumstances Leading to Sanctions, Their Contents, Effects, etc.], March 2013, pp.136-137.

⁴⁷ “*Supein mo Kitachousen Taishi wo Kokugai Tsuihou Shobun* [Spain Also Expels North Korean Ambassador],” *Sankei Shimbun*, September 19, 2017, www.sankei.com/world/news/170919/wor1709190008-n1.html; “*Sebamaru Kitachousen Houimou: Mekishiko, Peru ga Taishi Tsuihou; Bei Atsuryoku, Kuweito mo* [Tightening Net around North Korea: Mexico, Peru Expel Ambassadors, Kuwait too, as U.S. Steps Up Pressure],” *Jiji Press*, September 17, 2017, www.afpbb.com/articles/-/3143252?cx_position=6.

stop development had so far generally failed.⁴⁸ As for the economic sanctions that countries had imposed independently, Hufbauer et al recognized that sanctions by themselves could not stop nuclear proliferation but did conclude that the collective efforts of the European countries stemmed the proliferation of critical technology directly connected to nuclear weapons development. These include reprocessing technology, centrifuges, tubing, and metallurgy, resulting in the delay of North Korea's nuclear program.⁴⁹

In order to supervise sanctions against North Korea, the UNSC established a committee pursuant to resolution 1718, whose mandate has been extended to April 24, 2018 by resolution 2345 as of this writing. The Committee's report to date (S/2016/157) states that North Korea continues to bypass the sanctions based on UNSC resolutions, using the international financial system, trading in goods prohibited by the resolutions using air and sea shipping, and skillfully hiding illegal activities. The report also indicates that North Korea continuously engages in transactions of ballistic missile-related goods with countries in the Middle East and Africa and is recently showing signs of utilizing foreign-manufacture, high-end (civilian-use) electronic equipment for prohibited activities.⁵⁰ At the same time, the Committee severely criticizes the failure on the part of UN member countries to execute UNSC resolutions, the lack of political will, and low awareness, as well as problems of inappropriate legislation, etc.⁵¹

In this regard, there are intriguing arguments being made that North Korea, encircled by economic sanctions and export controls by the international community, has nonetheless been making economic progress by unexpected means. Bradley J. Hornback compares Cuming's 2013 argument to the report published in the same year by Human Rights Watch, a human rights organization. Cuming argues that there has been an enhancement of the social status of women and improvements in children's education levels, as seen from the results of surveys of the provision of housing to the people by the North Korean government and the improvement of the health insurance system for all the North Korean people. Human Rights Watch, on the other hand, reports that there has still been no improvement in the human rights situation in North Korea. Hornback argues that these contradictory claims are highly significant.⁵² He goes on to raise the possibility that the external pressure from economic sanctions is encouraging limited, market-oriented reform within the target country, as it once did in China and Vietnam, and considers this the root cause of the conflicting views on North Korea's economic growth under sanctions.⁵³ Frankly, it is difficult to determine which of these claims is correct regarding a country with such a low level of information disclosure as North Korea. However, there is room to consider the possibility that North Korea has not only exploited loopholes in nuclear non-proliferation and export controls but also has secured, through experience, the capacity to maintain and reform its domestic economic foundations in some way and to some degree secure the capacity to continue its nuclear program. In this sense,

⁴⁸ Kelsey Davenport, "Fact Sheet: UN Security Council Resolutions on North Korea," *Arms Control Today*, October 2015.

⁴⁹ Hufbauer, et al., *Economic Sanctions Reconsidered 3rd edition*, p.146.

⁵⁰ "S/2017/742* Midterm report of the Panel of Experts submitted pursuant to resolution 2345 (2017).

⁵¹ Ibid.

⁵² Bradley J. Hornback and Nikolay Anguelov, "Absorb and Control: How North Korea Responds to Economic Sanctions," in Nikolay Anguelov, ed., *Economic Sanctions vs Soft Power: Lessons from North Korea, Myanmar and the Middle East*, Palgrave Macmillan, 2015, pp.61-62.

⁵³ Ibid., p.62.

the fact that UNSC resolutions 2371 and 2375 in 2017 imposed sanctions that made further inroads into North Korea's foreign exchange earnings is significant.

While there is a wide range of opinions on the subject, applying the conditions laid out by Cortright and Lopez for the United Nations' multilateral sanctions to function effectively illustrates how to augment the measures that have been taken against North Korea to date as its nuclear weapons program gains momentum. Specifically, it is necessary to reconsider the purpose of imposing sanctions or the strategic objectives of the international community regarding the North Korean nuclear issue. Of course, even if such a debate were to take place among the relevant countries, it is unlikely that a political consensus will emerge around the multiple strategic options from regime change to military sanctions that Dethomas lists.⁵⁴ Permitting the possession of nuclear weapons by North Korea is inherently unacceptable, neither as a nuclear non-proliferation policy nor from the perspective of international security. The situation concerning North Korea is unlike that of de facto nuclear status of India and Pakistan, which were not members of NPT. North Korea received assistance for the development of nuclear power for peaceful purposes under the NPT while clandestinely developing nuclear weapons and, after announcing its exit from the NPT, conducted nuclear tests. Therefore, endorsing North Korea's possession of nuclear weapons could result in a deviation from a serious principle that is connected to the foundations of the nuclear non-proliferation regime.

On the other hand, there is little room to doubt that massive collateral damage will be inflicted on neighboring countries if forcible nuclear disarmament measures are taken against North Korea through surgical, possibly regime-changing, military sanctions. Meanwhile, an examination of past cases shows that the U.S. approach is one that satisfies the conditions for economic sanctions to function effectively. This involves exerting pressure by demonstrating a posture of being prepared to impose military sanctions, while expressing the possibility that it could engage in dialogue with North Korea if conditions could be met and also strengthening economic sanctions to unprecedented levels. However, since North Korea's nuclear weapons are directly connected to sustaining the regime both externally and domestically, it must be said that there are many real obstacles to the achievement of denuclearization through negotiations.

One option that could be discussed with some rationality under these difficult circumstances could be to make use of the standstill in the JCPOA (in the case of Iran). If this method is applied to North Korea, there is the possibility that this would put a temporary halt to the military provocations by North Korea in the form of nuclear tests and ballistic missile launches. Furthermore, towards the goal of denuclearization under the broader perspective and context of "nuclear disarmament," this method, coupled with the pressure from economic sanctions, may push North Korea to move forward with dialogue on the denuclearization of the Korean Peninsula. In this connection, it goes without saying that such an approach is fundamentally premised on the engagement of all the stakeholders and the prompt implementation of sanctions. If the countries involved are not in lockstep, loopholes will emerge in the sanctions, and if the implementation of the sanctions proves time consuming, that will only work in favor of the nuclear proliferating side.

Incidentally, although the JCPOA concerning Iran's nuclear issue that was discussed earlier

⁵⁴ Joseph M. Dethomas, "Sanctions' Role in Dealing with the North Korean Problem," *North Korea's Nuclear Future*, January 2016, 38north.org/wp-content/uploads/2016/01/NKNF-DeThomas-Sanctions-Role.pdf, pp.12-13.

was unavoidable in order to avoid the exercise of military force and freeze Iran's nuclear program in a verifiable manner, there is significant concern, in light of the principles of international norms on nuclear non-proliferation centered around the NPT, that the agreement sent an undesirable signal to North Korea. Although North Korea has stated that it is "prepared to resume" the six-party talks aimed at denuclearization, which are effectively negotiations with the international community,⁵⁵ the negotiations themselves have been suspended since 2008 in contrast to the Iranian approach. As a negotiating party in the six-party talks, North Korea continues to repeatedly engage in brinksmanship and military provocations and refuses to come to the negotiating table. Past studies have already shown through examples of sanctions since the 1990s, including India and Pakistan, that it is difficult to discourage the nuclear armament of target countries through economic sanctions in cases where determined regimes are already about to cross the threshold of nuclear proliferation (on the brink of "breakout").⁵⁶ From all this, it must be said that the difficulty of making progress in denuclearization under non-military sanctions is yet again coming to the fore.

As for Iran's nuclear issue, the successful conclusion of the consultations with the P5+1 in August 2015 can be seen in a positive light for taking a step towards preventing a military attack on Iran, a matter that had been the subject of concern. Israel announced many times that Iran had crossed a "red line,"⁵⁷ each time raising the concern of the international community over a military attack by Israel on Iran. Iran's nuclear facilities are dispersed over its broad territory, each of them highly resistant to aerial bombing and deemed invulnerable by experts.⁵⁸ Even if Israel were to conduct a military attack, it would probably be extremely difficult to completely take away Iran's capacity for nuclear development, at best delaying the program for a few years, and, at worst, providing Iran with the excuse to move forward full-speed with its nuclear program. As explained later in this study, Iran has stepped up the pace of its uranium enrichment activities in recent years. As a practical matter, it is probably true that the time for its capability to reach "breakout" was coming close. It goes without saying that Iranian "breakout" would have resulted in a sea change in the strategic environment in the Middle East, which could be expected to impact on the security of Israel, Turkey, Egypt and others as well as the NPT regime would be serious. As a result, in the JCPOA agreement, the nuclear non-proliferation side secured a concession from the initial preliminary agreement, which aimed to freeze uranium enrichment above the 5% threshold, to an upper limit of 3.67%, and it is possible to point out that there existed a range of political intent behind the agreement, reflecting a desire to avoid military attacks and buy time to hold consultations towards a comprehensive resolution of the nuclear problem.⁵⁹

⁵⁵ Reuters, October 3, 2014, jp.reuters.com/article/topNews/idJPKCN0HR2M820141002.

⁵⁶ Gary Clyde Hufbauer, et al., *Economic Sanctions Reconsidered 3rd edition*, Peterson Institute for International Economics, 2007, pp.145.

⁵⁷ "Binyamin Netanyahu demands 'red line' to stop Iran nuclear programme," *The Guardian*, September 28, 2012, www.theguardian.com/world/2012/sep/27/binyamin-netanyahu-iran-nuclear-programme; "Netanyahu to Lash Out in UN at Palestinian Authority Incitement," *The Jewish Press*, September 28, 2015, www.jewishpress.com/news/breaking-news/netanyahu-to-lash-out-in-un-at-palestinian-authority-incitement/2015/09/28/.

⁵⁸ "The Iran Deal: Better than expected," *The Economist*, April 2, 2015, www.economist.com/news/middle-east-and-africa/21647808-dogged-diplomacy-produces-impressively-detailed-agreement-better-expected.

⁵⁹ Sukeyuki Ichimasa, "Kakukaihatsu Kyougi: Iran no Bureikuauto wo Hitomazu Kaihi [Negotiations over Iran's Nuclear Issues: The International Community was able to Deter Iran's Breakout of Nuclear Development Somehow]," *Ekonomisuto* [Economist], February 10, 2014, extraordinary supplement edition, pp.82-83.

It is clear from a comparison of Table 2 (below) and Graph 1 published by the IAEA that the number of Iran's centrifuges as estimated at the time of UNSC resolutions on Iran's nuclear program has gone up significantly with the passing of time. Looking back, it can be inferred that as the negotiations with the international community became prolonged, the uranium enrichment activities in Iran inevitably made progress and enhanced the technological level there. Although several countries, including Japan, have already lifted sanctions based on UNSC resolution 2231 concerning the Iranian nuclear program (S/RES/2231), it is necessary to change the understanding of the "dilemma around the breakout capacity in nuclear weapons development" as the negative impact of the prolongation of nuclear negotiations under economic sanctions.

In considering the Iranian nuclear issue, the problem of WMD proliferation in the Middle East must not be ignored. For example, there is the de facto possession of nuclear weapons by Israel and the history of the series of chain reactions in the region in the context of nuclear and WMD proliferation in response, beginning with Egypt and continuing with the suspected nuclear programs of Iraq, Libya, and Syria, among other things. (Although Egypt has agreed upon a peace treaty with Israel, that treaty explicitly states that it will not join the Chemical Weapons Convention unless Israel gives up its nuclear weapons). In this connection, even today, the negotiation posture of the United States and Europe regarding Iran and the outcome of the negotiations will potentially have a major impact on the future nuclear power policies of the other Middle East countries. For example, at the 2015 NPT Review Conference, it was believed that if the United States and Europe allowed Iran to continue its nuclear program at a certain level, Saudi Arabia would claim an equivalent right.⁶⁰ This symbolizes how the sanctions imposed for nuclear non-proliferation and the negotiations around the establishment of the conditions for their retraction are intractable and loaded with knock-on effects on other countries.

In any case, as mentioned at the beginning of this study, it is not easy to identify the optimal solution to nuclear non-proliferation and economic sanctions given the existence of the multilayered, multinational framework existing today, such as export controls and the non-proliferation measures based on UNSC resolutions. Given the aspect of technological "breakout" in developing nuclear weapons as a race against time, the "dilemma around the breakout capacity in nuclear weapons development" will continue to be a challenge that the international community will face going forward in grappling with the nuclear proliferation issue.

In addition, another factor to take into consideration is the presence of Russia, Pakistan, and China, which have been suspected of assisting Iran's nuclear development in the past.⁶¹ It was reported in September 2017 that US President Trump was considering revisiting JCPOA and the EU was pushing back by stating that there was no need for renegotiation.⁶² In general, sustaining the continual involvement of great powers, which play a role as gatekeepers against proliferators, in the sanctions is an important issue in the context of nuclear proliferation and economic sanctions.

⁶⁰ *Mainichi Shimbun*, May 23, 2015, mainichi.jp/select/news/20150524k0000m030082000c2.html

⁶¹ Hufbauer, et al., *Economic Sanctions Reconsidered 3rd edition*, pp.144-145.

⁶² "Iran Kakugoui Rikou wo Kakunin = EU Gaisyo, Beiseiken wo Kensei—Kankeikokukaigo [Confirming Implementation of Nuclear Agreement with Iran—EU Foreign Minister Pushed Back against US Administration—Meeting of Relevant Countries]," *Jiji Press*, September 21, 2017.

Table 2 Iranian Nuclear Issue and the UN Response up to JCPOA

Resolution	Date	Main Items
UNSC resolution 2231	June 20, 2015	Explicitly list main items coming into effect on Implementation Day set forth in JCPOA announced by Iran and EU3+3.
UNSC resolution 2224	June 9, 2015	Extended term of panel of experts established under resolution 1929 to not exceed July 9, 2016.
UNSC resolution 2159	June 9, 2014	Extended term of panel of experts established under resolution 1929 to not exceed July 9, 2015.
UNSC resolution 2105	June 5, 2013	Extended term of panel of experts established under resolution 1929 to not exceed July 9, 2014.
UNSC resolution 2049	June 7, 2012	Extended term of panel of experts established under resolution 1929 to not exceed July 9, 2013.
UNSC resolution 1984	June 9, 2011	Extended term of panel of experts established under resolution 1929. Requested the committee established under resolution 1737 and the panel of experts to provide information regarding the implementation of measures based on existing resolutions related to Iran.
UNSC resolution 1929	June 9, 2010	Reaffirms based on previous UNSC resolutions that Iran must not construct any uranium-enrichment, reprocessing, or heavy water-related facility. Demands that Iran take care of the problems it caused by attempting to construct a heavy water-related facility in Qom and to provide access without delay to all sites, equipment, persons and documents in Iran requested by the IAEA, etc. Calls on UN member countries not to engage in nuclear- and delivery system-related transfers in addition to the conventional weapons prescribed by a list including to individuals and organizations related to the Islamic Revolutionary Guard Corps. Establishes Panel of Experts to gather, examine and analyze information from States, relevant United Nations bodies and other interested parties regarding the implementation of the sanction measures.
UNSC resolution 1803	March 3, 2008	Calls on UN member countries to exercise vigilance and restraint regarding the entry into or transit through their territories of individuals who are engaged in, directly associated with or providing support for Iran's proliferation sensitive nuclear activities or for the development of nuclear weapon delivery systems and to prevent the provision of financial services that may contribute to them. Also calls on UN member countries to conduct inspections of aircraft or vessels transporting goods to and from Iran at their airports and seaports in case there are reasonable grounds to believe that it is transporting nuclear-related goods subject to prohibition.
UNSC resolution 1747	May 24, 2007	Calls on UN member countries to exercise vigilance and restraint on the export and import of goods and technology that could contribute to Iran's nuclear-related activities and the entry into or transit through their territories of related persons. Also calls on UN member countries to prohibit the procurement of nuclear- and missile-related goods, etc. from Iran and the provision of financial services, etc. to Iran.
UNSC resolution 1737	December 23, 2006	Calls on UN member countries to prohibit exports and imports of goods and technology which could contribute to Iran's nuclear-related activities and the provision of financial services and establishes the Committee for sanctions on Iran.
UNSC resolution 1696	July 31, 2006	Demands that Iran shall suspend all enrichment-related and reprocessing activities, including research and development. In the event that Iran has not by August 31, 2006 complied with this resolution, adopt appropriate measures under Article 41 of Chapter VII of the UN Charter.

Source: S/RES/2231, S/RES/2224, S/RES/2159, S/RES/2105, S/RES/2049, S/RES/1984, S/RES/1929, S/RES/1803, S/RES/1747, S/RES/1737, S/RES/1696. Ministry of Foreign Affairs announcements, etc. were also referenced.

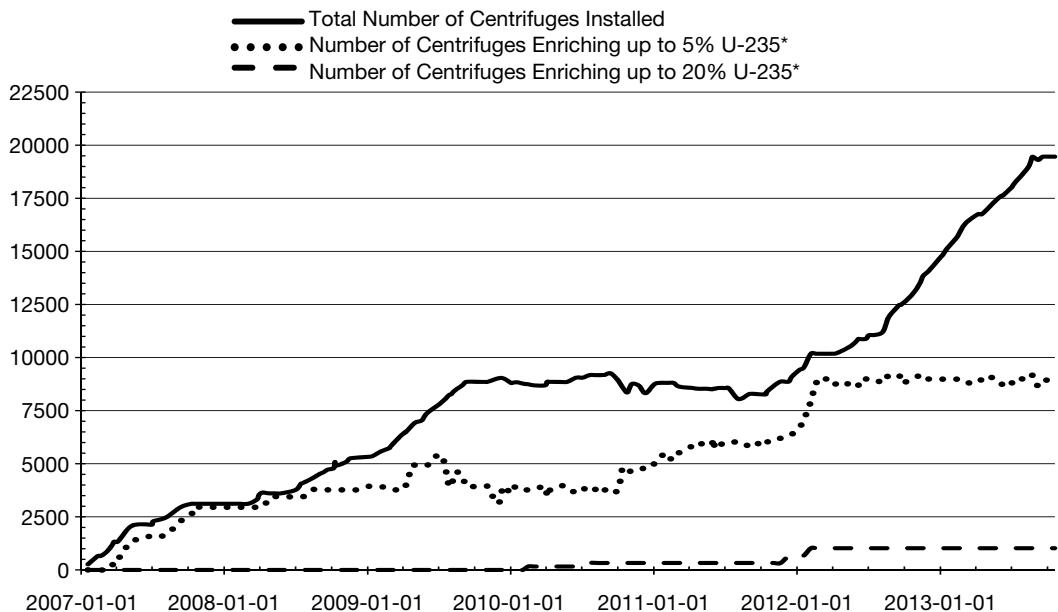


Figure 1 Status of Centrifuges in Iran

Note 1: Centrifuges involved in R&D activities are not included.

*Not all of the centrifuges fed with UF6 may have been working.

Source: IAEA, GOV/2013/56: Implementation of the NPT safeguards agreement and relevant provisions of Security Council Resolutions in the Islamic Republic of Iran, Annex 2, p.1.

(3) Issues and Future Prospects for Economic Sanctions against Ongoing Nuclear Proliferation
 Going forward, it is essential to improve smart sanctions while enhancing the effectiveness of multilateral sanctions. Table 3 lists the items common to UNSC smart sanctions against both North Korea and Iran. In either country's case, there is a history of reinforcement and review of the sanction items imposed reflecting the state of affairs of the nuclear programs over time. However, it is not easy to obtain compliance with each of these items over their implementation from all UN member countries.

As Asada and Yamamoto, who have served on the Panel of Experts for the sanctions on North Korea, point out, a problem inherent to each of the imposed smart sanctions is that there is no solution to scenarios where a designated organization or individual changes its/his/her name (after being designated) or a designated organization establishes another organization that acts in its stead, thereby avoiding the sanctions. Thus, it is important for the UNSC Panel to continuously review and revise the list.⁶³ However, these efforts become part of frustrating cat-and-mouse games. Furthermore, there are the inherent political difficulties of coming to a common

⁶³ Asada, Ibid., pp.17-19; Masahiko Asada, "Anpori Ketsugi ni Motozuku Yushutukanri [Export Control Based on UN Security Council Resolution]," Asada ed., *Yushutsukanri: Seido to Jissen* [Export Controls: System and Practice], Yushindo, 2012, pp.125-152; Takehiko Yamamoto, "Tsuujouheiki no Yushutsukanri [Export Controls for Conventional Weapons]," Asada ed., *Yushutsukanri: Seido to Jissen* [Export Controls: System and Practice], Yushindo, 2012, pp.101-123.

Table 3: Comparison of Main Sanction Items against North Korea and Iran (2006-2017)

Type of Sanctions	Name of Item	Iran*	North Korea
Sanctions on trade	Blanket embargo	×	×
	Embargo on arms shipments	○	○
	WMDs and ballistic missiles	○	○
	Petroleum products	×	○
	Coal	×	○
	Mineral resources (iron ore, gold, rare earths, etc.)	×	○
	Oil- and gas-related facilities	×	×
	Luxury goods	×	○
Financial sanctions	Prohibition of commercial activities and investment	×	×
	Prohibition of opening bank branches	△	△
	Prohibition of correspondent arrangements	×	△
Freezing assets	Freezing assets in name of leaders	×	×
	Freezing assets with clear statement of the purpose of the assets	○	○
Others	Cash	×	○
	Prohibition of travel	○	○
	Implementation of cargo inspections	△	○
	Suspension of new aid	△	△

○: mandatory matter ×: None applicable △: Requested matter

Iran*: Economic sanctions regarding nuclear development lifted as the result of JCPOA coming into force.

Source: Created by author taking into consideration the situation until 2015 and 2017 for Iran and North Korea respectively, using for reference Mitsubishi UFJ Research and Consulting Co., Ltd., *Itaku Chousa Anporiketsugi in you Keizaiseisai: Seisai ni Itaru Jijou, Naiyou, Kouka tou no Oudanteiki Hikakubunseki* [Consigned Survey Economic Sanctions under UNSC Resolutions: Crosscutting Comparative Analysis of the Circumstances Leading to Sanctions, Their Contents, Effects, etc.], March 2013, pp.136-137.

understanding between permanent members and non-permanent members and the aforementioned issue of compliance in the implementation of the sanctions.

Elsewhere, Nicholas L. Miller makes an illuminating point in his pioneering study of the structure and issues regarding nuclear non-proliferation and economic sanctions from a perspective aligned with international politics, stating that the relationship between the United States, which plays an overwhelmingly dominant role with its unilateral sanctions, and the target country influences to one degree or another the latter's ultimate decision to embark on nuclear development. Miller suggests the existence of three paths regarding the possibility of economic sanctions to deter nuclear proliferation: (a) security, (b) domestic politics, and (c) norms.⁶⁴ Specifically, (a) countries that rely on military assistance from and/or host armed forces of the United States fear damaging relations with the United States by embarking on nuclear development, (b) regimes that are deeply connected to the international community prioritize their economic agendas to be achieved over nuclear development, and (c) national leaders who consider nuclear development tend to choose self-restraint in the face of international norms reinforced by sanctions, which function as coercive mechanisms, as the result of their rational determination and deep reflection. In this connection, his analysis of past economic sanctions (unilateral sanctions by the United States) that effectively positioned nuclear non-proliferation as the policy objective, indicates that of the eight cases from

⁶⁴ Nicholas L. Miller, "The Secret Success of Nonproliferation Sanctions," *International Organization*, Fall 2014, Vol.68, No.4, pp.916-917.

1975 to 2014, only one case was a success (2004, Libya). This is a success rate of 12.5%. Even with the scope expanded from implemented sanctions to the exercise of the political threat that sanctions would be imposed, there were two successful cases out of the 13 cases falling under this category (South Korea and Taiwan), a success rate of 15.4%.⁶⁵ Based on these considerations, Miller points out that, in the relationship between nuclear non-proliferation and sanctions, it is not capacity or incentives but the creation of a disincentive for the proliferator that is important.⁶⁶ Finally, with regard to the policy implications of sanctions, Miller concludes from the perspective of the United States in particular, which has most often implemented unilateral sanctions, that (a) nuclear non-proliferation sanctions must be maintained (by the United States) even if they are unable to stop highly active nuclear programs, (b) nuclear proliferation can be deterred by economic sanctions only in the case where a country that is reliant militarily or economically on the United States is being targeted, and that therefore (c) it is misguided to adopt only sanctions that target countries hostile to the United States, such as Iran and North Korea, in which case it is important to secure engagement from partners that are more important to the targeted countries.⁶⁷ The partners in question here can be deduced to mean great powers that are the so-called “gatekeepers,” i.e. China and Russia, who have influence over the decisions of Iran and North Korea to continue on their nuclear development path.

While these points that Miller makes are informative in many ways for considering this issue, it is also necessary to add to the debate the question of whether or not the United States will ultimately show the will to take military sanction measures or allow other countries to execute military sanctions. In other words, this raises the question, does it not, of how powerful a position the international community can confront the targeted country with? In the case of the Iranian example, which culminated in JCPOA, while Israel strenuously issued warnings of military sanctions and the “redline” for resorting to military force was drawn and redrawn,⁶⁸ an agreement was reached between the P5+1 and Iran that avoided military sanctions. Regarding North Korea, while the enormity of the risk from disarming North Korea’s nuclear weapons development through military sanctions had been noted,⁶⁹ as North Korea accelerated the development of nuclear weapons and their means of delivery over the past year, the diplomatic skirmishing between the United States and North Korea also heated up. North Korea’s nuclear issue is far from being resolved at the time of this writing, and unprecedently harsh non-military sanctions with the objective of non-proliferation are being pursued, amid international concerns that the United States will implement military sanctions as a last resort.

⁶⁵ Ibid., pp.928-929.

⁶⁶ Ibid., p.937.

⁶⁷ Ibid., pp.938-939.

⁶⁸ “Binyamin Netanyahu demands ‘red line’ to stop Iran nuclear programme,” *The Guardian*, September 28, 2012, www.theguardian.com/world/2012/sep/27/binyamin-netanyahu-iran-nuclear-programme; “Netanyahu to Lash Out in UN at Palestinian Authority Incitement,” *The Jewish Press*, September 28, 2015, www.jewishpress.com/news/breaking-news/netanyahu-to-lash-out-in-un-at-palestinian-authority-incitement/2015/09/28/.

⁶⁹ See the following for an example. James E. Goodby, “North Korea: The Problem That Won’t Go Away,” Brookings Axess Magazine, May 2003, www.brookings.edu/research/articles/2003/05/northkorea-goodby.

Conclusion

As conditions for desirable economic sanctions, Lloyd Dumas prepares a number questions and points to the importance of being able to answer them properly, the questions being, among others: whether the economic sanctions are appropriate to the policy objectives that they are supposed to satisfy, whether the sanctions are justified, whether the sanctions have inhumane consequences, whether the sanctions are being executed appropriately and are being complied with, and whether incentives can be offered to the targeted country for dialogue and negotiations without resorting to military force.⁷⁰ In this case, it goes without saying that these conditions are premised on the understanding that careful case-by-case considerations, from the state of the targeted country to alignment among the main related countries and regions, are essential.

At the same time, it should be pointed out that there is an inherent difficulty in nuclear non-proliferation as a highly sensitive security policy objective. As seen in the preceding section, one cannot overlook the negative influence that examples of nuclear proliferation and the response from the international community have on subsequent potential proliferators. Thus, the response from the international community to proliferation can be compared to the relationship between “dots in a line.” Even if each case of nuclear proliferation is a “dot,” a determined proliferator sees the international community’s response to proliferation as one “line.” Moreover, the narrative created by “connecting the dots” takes place over the short period between 1945 and the present, making the whole picture easily visible.

Even if the international community becomes aware of a secretly conducted nuclear development program and takes measures against it such as economic sanctions, it is a near-impossible task to stop the program if it has come close to the “breakout” stage. Meanwhile, history tells us that it is not necessarily likely that military sanctions entailing enormous costs will be placed on the targeted country, at least not at the time of this study.

In this sense, the political impact that the 2015 conclusion of the negotiations on the Iranian nuclear issue and the lifting of sanctions has on current and future non-proliferation must be appreciated anew. It is also necessary to keep watch on the outcome of the review of JCPOA that the United States is demanding. As for North Korea, which moves forward undaunted towards developing nuclear weapons, the fundamental problem of whether military sanctions are the optimal solution casts a large shadow on the very foundations of the sanctions for nuclear non-proliferation executed so far. Further collaboration and stricter implementation of sanctions, including the engagement of “gatekeepers,” is desirable so that the unprecedentedly powerful economic sanctions by the international community leads to effective nuclear non-proliferation measures against North Korea. There is a good chance that the international community’s response to North Korea, which continues to move forward to develop nuclear weapons despite sanctions and repeatedly commits military acts of provocation, will be the greatest of touchstones regarding the future of nuclear non-proliferation and the effectiveness of economic sanctions in this field. At the same time, it is necessary for all stakeholders engaged in the Iranian and/or North Korean issues to renew yet again their awareness of the importance of nuclear non-

⁷⁰ Lloyd Dumas, “A Proposal for a New United Nations Council on Economic Sanctions,” in David Cortright and George A. Lopez, eds., *Economic Sanctions: Panacea or Peacebuilding in a Post-Cold War World?* Westview Press, 1995, pp.190-198.

proliferation centered around NPT and the export control regime, and the multilayered, nuclear non-proliferation framework that has been constructed and supported by the series of UNSC resolutions and coalitions of the willing.

