

**ECONOMIC SANCTIONS AND NUCLEAR PROLIFERATION:
THE CASE OF IRAN**

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Abstract

The impact of international economic sanctions on Iran's economy and whether economic sanctions can stop Iran's suspected nuclear program are currently the subject of vigorous discussion among economists and policymakers alike. As sanctions against Iran have intensified, so has the debate over the effectiveness of economic sanctions as stand-alone policies in halting Iran's nuclear ambitions. While some argue that sanctions on Iran have made good headway, others claim that they have been futile. Using a case study approach, this study examines the impact of the sanctions on Iran's economy and the extent to which the sanctions have influenced the country's nuclear policy. A major finding of this study is that although the international sanctions have burdened Iran's economy, they have not pushed it to the verge of collapse. Also, the sanctions have only partially contributed to the country's economic woes. The present work also analyzes historical episodes where sanctions were used to halt nuclear proliferation and, based on this analysis, discusses the future prospects of the sanctions campaign against Iran. This historical analysis, coupled with the analysis of the effect of the sanctions on Iran's economy, shows that economic sanctions as stand-alone policies are unlikely to stop Iran from eventually becoming a nuclear power.

Keywords: economic sanctions, nuclear proliferation, Iran

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List of Abbreviations

CISADA..... Comprehensive Iran Sanctions, Accountability and Divestment Act

CTBT..... Comprehensive Nuclear-Test-Ban Treaty

IAEA..... International Atomic Energy Agency

IIANA Iran-Iraq Arms Non-Proliferation Act

ILSA..... Iran and Libya Sanctions Act

IRGC Iranian Revolutionary Guard Corps

IRISL Islamic Republic of Iran Shipping Lines

ISA Iran Sanctions Act

ITRA..... Iran Threat Reduction and Syria Human Rights Act

ITSR..... Iranian Transactions and Sanctions Regulations

NDAA..... National Defense Authorization Act

NIOC..... National Iranian Oil Company

NITC National Iranian Tanker Company

NPT Non-Proliferation Treaty

UNSC United Nations Security Council

WMD..... Weapons of mass destruction

INTRODUCTION

Economic sanctions are an important tool of international diplomacy. In cases when a military intervention would be too drastic or a diplomatic boycott too futile, economic sanctions become the optimal instrument of foreign policy. Economic sanctions have existed for a very long time. Since World War I, sanctions have been used numerous times to pursue various policy goals. Despite their widespread use, economic sanctions remain a controversial tool of international policy.

Sanctions can be used to follow a wide range of foreign policy goals, such as stopping acts of military aggression, destabilizing governments, protecting human rights, fighting international terrorism, and obstructing nuclear proliferation. Since the Treaty on the Non-Proliferation of Nuclear Weapons, commonly known as the Non-Proliferation Treaty (NPT), entered into force in 1970, economic sanctions have been occasionally used against countries aspiring to acquire nuclear weapons. The use of economic sanctions to stop a country from joining the nuclear club has had varying degrees of success depending on the extent of the sanctions and the underlying economic and political conditions in the target country.

The reasoning behind imposing economic sanctions in order to stop or at least delay a target country's plans to develop nuclear weapons is simple: sanctions can potentially weaken the target country's economic might and increase the cost of developing such weapons. Economic sanctions are expected to create economic hardships in the target country and force its government to change its nuclear policy. It is also believed that since making nuclear weapons is very costly, economic sanctions can potentially yield positive results by substantially increasing the already high costs of the target country's nuclear program.

Iran's nuclear program has been targeted with economic sanctions for more than two decades. While the US has been the predominant country imposing sanctions against Iran, more recently it has been joined by the international community. Since the International Atomic Energy Agency (IAEA) Board of Governors concluded in 2005 that Iran had not complied with its safeguards agreement, the United Nations Security Council (UNSC) has imposed several rounds of economic sanctions on Iran.

A number of reasons justify closely analyzing the economic sanctions against Iran's nuclear program. First, Iran's nuclear program has sparked worldwide controversy. There are fears that if Iran becomes a nuclear power, the country might become even more aggressive towards its neighbors and destabilize the balance of power in the Middle East. This might in turn lead to a nuclear proliferation race in the region.

Second, since Iran is the second-largest OPEC oil producer, sanctions targeting its energy sector are likely to adversely affect global oil prices. Moreover, Iran is situated in the Persian Gulf next to the Strait of Hormuz, which is a major transit route for oil shipments. Therefore, uncertainty about stability in the region and Iran's oil exports usually causes world oil prices to fluctuate. If the current standoff over Iran's nuclear policy drags on, world oil prices could rise significantly.

Third, sanctions are inherently very costly tools of international policy. Imposing sanctions creates costs not only for the target country, but also for the countries imposing them. If the current sanctions continue for a very long time, public and international support for them might wane. Also, the economic sanctions imposed against Iran have hurt ordinary citizens in the country. All of the above suggests that there are compelling reasons to closely analyze the economic sanctions on Iran.

The ongoing debate on sanctions against Iran centers on a number of key issues. The most important question is whether the sanctions have forced the Iranian regime to change its nuclear

policy in any way. Since sanctions are meant to cause policy change by inflicting economic difficulties on the target country, a related question is just how much economic damage has been caused to the Iranian economy by the sanctions. Another important question that needs to be answered at this stage is whether economic sanction will be able to stop Iran from eventually becoming a nuclear power.

Using a case study approach, I will examine the extent to which the economic sanctions against Iran have influenced the country's nuclear policy. Before establishing how much progress Iran has made in its nuclear endeavors, I will study the impact of the sanctions on the country's economy. While many scholars have analyzed the economic sanctions imposed against Iran's nuclear problem, few have studied the case in great detail in light of historical episodes where sanctions were used to halt nuclear proliferation. Therefore, I will analyze such historical cases before discussing the case of Iran. My findings show that although the international sanctions have burdened Iran's economy, they have not pushed it to the verge of collapse. A related finding of my study is that economic sanctions as stand-alone policies are unlikely to stop Iran from eventually becoming a nuclear power.

The present work is organized as follows. Chapter 1 deals with the theoretical framework behind economic sanctions. Chapter 2 presents a chronology of important economic sanctions that have been imposed by the United States and the United Nations against Iran's nuclear program. It also discusses other countries' involvement in the sanctions campaign against Iran. Chapter 3 deals with the impact of the international sanctions on the Iranian economy. Chapter 4 presents an overview of the outcomes of all major historical sanctions episodes where the underlying goal was to stop a target country's efforts to develop nuclear weapons. Chapter 5 discusses the success of the economic sanctions in halting Iran's quest to become a nuclear power. Finally, the last part

summarizes the main conclusions of the present work and offers recommendations to policymakers on how to make the sanctions on Iran more effective.

CHAPTER 1: THEORETICAL FRAMEWORK

Economic sanctions have been used as tools of international diplomacy since time immemorial. Historically sanctions were usually accompanied by military action. In recent history, however, economic sanctions have been used as stand-alone policies to follow a variety of foreign policy objectives.

Even though sanctions are often used in contemporary international relations, there is much disagreement in the scientific community about the effectiveness of economic sanctions as foreign policy tools. Many economists believe sanctions are not effective foreign policy tools. Others hold that economic sanctions can be moderately successful in achieving various policy objectives. Despite these concerns, economic sanctions remain a popular international policy tool since there are only a small number of policy choices available in regulating international affairs.

While analyzing economic sanctions it is important to establish just what constitutes an economic sanction. Different scholars have defined economic sanctions in different ways. Hufbauer, Schott, and Elliott (1990), who are often regarded as authorities on sanctions, define economic sanctions as “the deliberate, government inspired withdrawal, or threat of withdrawal, of customary trade or financial relations” (p. 2). By “customary” they refer to relations that would have taken place if there had not been any sanctions. In other words, they regard economic sanctions as restrictions on normal trade or financial relations among countries.

Baldwin (1985) has offered a broader definition of economic sanctions. He views economic sanctions as part of statecraft along with other noneconomic instruments such as diplomacy and propaganda (p. 36). More recently some scholars have offered econometric definitions of economic sanctions. For example, Marinov (2005) defines economic sanctions as “restrictions on customary economic exchange placed in order to change some behavior y in a country” (p. 15).

All of the above definitions reveal the main purpose of economic sanctions, namely, to inflict costs on a target country in order to change its policy. Economic sanctions are most often imposed against a country that engages in some undesirable behavior. This behavior can be either domestic or international. In addition, sanctions can be imposed either by groups of countries acting together or by individual nations. It is also worth noting that economic sanctions are not always negative. Sanctions can also be positive measures, such as giving economic aid to the target country, lifting existing sanctions, and having preferential trade relations with the target.

There are different types of economic sanctions. Hufbauer et al. (1990) distinguish between three types of economic sanctions in their influential book *Economic Sanctions Reconsidered*. A “sender” country, the country that is going to impose sanctions or threatening to do so, may try to cause suffering to its “target” country by limiting the target country’s exports, by restricting its imports, or by hindering its financial activities. While export restrictions are enacted to deny access to important goods in the target country, import limitations are used to reduce the target country’s exports and thereby lower its revenues. Financial sanctions intend to hurt the target county by increasing the cost of credit to it and by making conducting transactions difficult.

Economic sanctions are used to pursue a variety of foreign policy objectives. According to Kaempfer and Lowenberg (1992), sanctions are used to pursue three general goals. First, sanctions are imposed when a target country’s policies threaten the well-being or security of the sender countries. Second, economic sanctions can be used for moral or ideological reasons. A common example of sanctions imposed based on moral grounds is the international sanctions against South Africa over its apartheid policy. Finally, sanctions can be used in trade policy and commercial relations in response to target countries’ undesirable trade policies.

While sanctions are usually imposed to punish some undesirable behavior, they might also be used to pursue other related objectives. The use of sanctions might also serve to send a warning signal to other countries that certain actions will not be tolerated. Hufbauer, Schott, Elliott, and Oegg (2007) compare the motives behind sanctions to the aims of criminal law:

The parallels between the motives for sanctions and the three basic purposes of criminal law—to punish, to deter, to rehabilitate—are unmistakable. Countries that impose sanctions, like states that incarcerate, may find their hopes of rehabilitation unrealized, but they may be quite satisfied with whatever punishment and deterrence are accomplished (p. 7).

The mechanism through which economic sanctions are expected to work is simple. Economic sanctions are expected to inflict costs on the target country and create political pressure within it. This in turn is expected to force the target country's leaders to change their policy. Kaempfer and Lowenberg have argued that, in addition to the usual market mechanisms, sanctions can also affect political outcomes through influencing interests groups in the target country (1992). According to this so-called public choice approach to analyzing sanctions, the signals communicated by economic sanctions to various interests groups within target countries are at least as important as the usual economic effects of these sanctions.

Economic sanctions are usually used to pursue political goals and measuring political outcomes is not always easy. Therefore, a distinction should be made between the economic impacts of sanctions and, stemming from this economic impact, the political outcome of the sanctions. Hufbauer et al. (2007) point out that the success of a sanctions episode has really two parts: “the extent to which the policy *result* sought by the sender country was in fact achieved and the *contribution* to success made by sanctions (as opposed to other factors such as military action or the mere lapse of time)” (p. 49). Thus, it is not sufficient to just measure the outcome of sanctions. We also have to determine what portion of the political outcome can be attributed to the sanctions. This further complicates measuring the impact of sanctions.

A significant body of literature has emerged that examines the effectiveness of using economic sanctions in foreign policy. There seems to be little consensus among economists about whether sanctions work, either in general or in specific cases. Many economists, claiming that since economic sanctions do not inflict large costs on the target countries, believe that sanctions are not effective foreign policy tools (Kaempfer & Lowenberg, 1992, p. 3). However, others contend that sanctions can produce at least partial policy changes. Hufbauer, Schott, Elliott, and Oegg (2007) analyzed over 200 sanctions episodes and concluded that sanctions were successful at least to some extent in 34 percent of the cases they studied.

The effectiveness of a sanctions episode will depend on a number of general factors. Hufbauer et al. (2007) point out that the success of a sanctions episode largely depends on the type of foreign policy goal being sought through the use of sanctions. Sanctions are most likely to work when the country imposing them is larger and has more trade and financial leverage than the country being targeted. Also, the efficacy of a sanctions effort depends on the extent of international cooperation in sanctioning the target country (Martin, 1992). If many countries join the sender country, the sanctions will be more likely to have the intended effects. Also, the outcome of a sanctions effort depends on the economic and political conditions in the target country. Generally, sanctions are going to be most effective when, among other things, the target country has a weak economy. An example of a weak economy would be one that is not diversified and relies heavily on a few industries.

Given the debate about the effectiveness of economic sanctions in general, it is not surprising that there is much disagreement about the efficacy of using sanctions with respect to Iran's nuclear program. Even though there is little consensus among economists about whether sanctions against Iran can be effective, the United States, the United Nations, the European Union,

and several other individual countries have imposed increasingly stringent economic sanctions against the country to halt its nuclear and missile programs. The level of sanctions on Iran has reached an unprecedented level. This can be clearly seen in the historical overview presented in the next chapter.

CHAPTER 2: OVERVIEW OF ECONOMIC SANCTIONS ON IRAN

Iran is believed to have been developing nuclear weapons for more than three decades. As an official party to the Non-Proliferation Treaty, Iran has the right to have nuclear programs for peaceful purposes. Despite the country's claims that its nuclear program is for civilian purposes only, there are serious signs that its activities are not entirely for peaceful purposes. The country has repeatedly failed to comply with the requirements of the IAEA and has continued to enrich uranium to very high levels.¹

There are a number of reasons for Iran's desire to join the nuclear club. First, Iranian leaders seem to believe that having a nuclear weapon will bring Iran dominance in the Middle East (Hufbauer et al., 2007). Having nuclear weapons would increase Iran's bargaining power in the region. Second, Iran feels uneasy about the fact that Israel possesses nuclear weapons. Finally, there are ideological reasons for Iran's desire to become a nuclear power. Having such advanced weapons would show off Iran's military and scientific prowess to the rest of the world.

The reasoning behind the economic sanctions against Iran is to reprimand the country for non-compliance with its NPT safeguards agreement and impair the country's economic capability in the hope of halting or at least delaying its nuclear programs long enough until a new, possibly less hostile government comes to power. Sanctions have also been inflicted against Iran for a number of reasons other than its quest to develop nuclear weapons. Many countries have imposed unilateral sanctions because of Iran's support for terrorist organizations such as Hezbollah, Hamas, and Al-

¹ At this point it is useful to distinguish the difference between nuclear reactors and nuclear bombs. The main difference is that nuclear bombs require significantly more enriched fissile material than do nuclear power plants. Also, the process of nuclear fission in nuclear reactors is controllable, but this process is not controllable in the case of nuclear bombs.

Qaeda. Also, recently Iran has been subjected to sanctions because of its alleged support for the regime of Bashar al-Assad in Syria which has massively cracked down on protesters in the country. Also, many countries have sanctioned Iran for its poor human rights record.

With its sanctions against Iran, the US is believed to be pursuing another implicit goal, namely, changing the political regime of the country. The current President of Iran Mahmoud Ahmadinejad has been generally hostile towards the West, particularly towards the US. However, changing the political regime of Iran has not been an explicit goal of the sanctions against the country. The US and its allies seem to be mostly concerned about Iran's nuclear ambitions. The outcome of the upcoming Iranian presidential elections could change the country's relations with Western countries.

The US has been leading the sanctions campaign against Iran's nuclear program. The two countries have had antagonistic relations for a very long time. Iran's relations with European nations have not been overly amicable either. In recent years, the US has been joined by the international community in its efforts to hamper Iran's attempts to join the nuclear club.

Below I will present a chronology of key events in the history of economic sanctions against Iran. Since the US and UN have imposed a very large number of sanctions on Iran, it will be useful to review these sanctions by breaking them up into smaller time spans. Relying on the work of Hufbauer et al. and my own research, I will present a brief overview of key US sanctions events by dividing the period from the mid-1980s until now into equal five-year periods. Then, relying on the data from the United Nations, I will present a chronology of UN sanctions rounds against Iran. Finally, I will finish by shortly discussing sanctions against Iran by the European Union and certain other individual countries.

2.1 US Sanctions on Iran

The United States imposed economic sanctions against Iran for the first time during the Iran hostage crisis which lasted from November 1979 until January 1981. During the crisis a group of radical Iranians, mostly students, kept 53 Americans hostage for 444 days. The Carter administration attempted to rescue the hostages but failed. After long negotiations the hostages were finally released in January 1981 on the day of Ronald Reagan's inauguration as President of the US. The US imposed trade and financial sanctions during the crisis and the sanctions had a significant impact in achieving the release of the hostages (Hufbauer et al., 2007).



Figure 1. US economic sanctions against Iran (1984-1990)

Source: *Case Studies in Economic Sanctions and Terrorism* by Hufbauer et al., 2012.

After the 1983 bombing of a US marine base in Beirut in which over 200 people died, the US added Iran to its list of countries supporting terrorism and imposed stricter sanctions against it. In 1984, the US embargoed exports of certain chemicals to Iran and Iraq after it became known that Iraq had used chemical weapons against Iran. That same year the US government stopped granting export licenses for shipments of aircraft and repair parts to Iran.

In 1987, the US prohibited exporting scuba diving gear to Iran to reduce the threat of mine attacks in the Persian Gulf. Following the passage of a 1987 resolution in the US Senate and House of Representatives which called for a total ban on oil imports from Iran, President Ronald Reagan announced a total embargo on Iranian oil. The president also banned exports of 14 types of goods to Iran that could be used for military purposes.

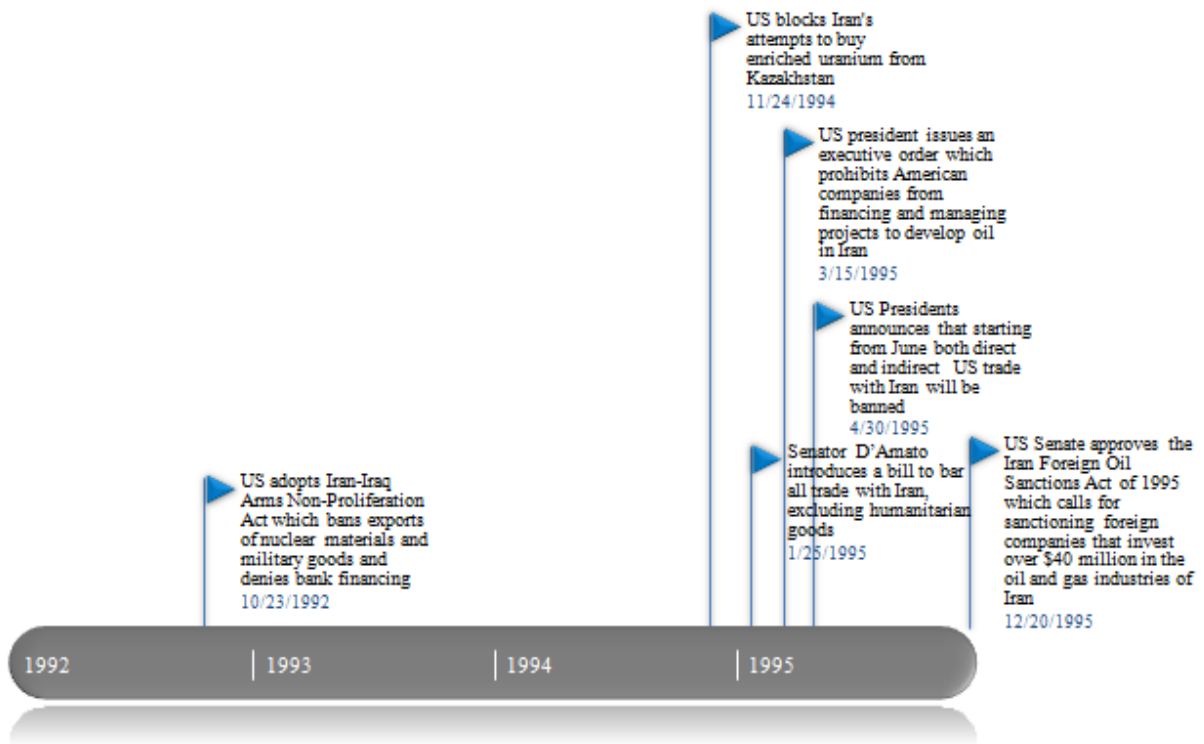


Figure 2. US economic sanctions against Iran (1991-1995)

Source: *Case Studies in Economic Sanctions and Terrorism* by Hufbauer et al., 2012.

In 1992, the US adopted the Iran-Iraq Arms Non-Proliferation Act (IIANA) which extended the restrictions of the Iraq Sanctions Act of 1990 to Iran. The IIANA banned exporting military goods to Iran. It also ceased the provision of export and import bank financing to Iran.

In the mid-1990s, the US started to take more and more measures to halt Iran's nuclear program. After successfully obstructing Iran's attempts to buy enriched uranium from Kazakhstan

in 1994, the US banned all trade with the country in 1995. Since that time the US has imposed numerous economic sanctions targeting Iran's key energy sector to weaken the country's economic might. President Clinton issued an executive order in 1995 which prohibited US companies from taking part in oil development projects in Iran. Later that year the president announced that both direct and indirect trade with Iran would be stopped. As 1995 came to close, the US Senate approved the Iran Foreign Oil Sanctions Act of 1995 which established a limit to foreign companies' investment in the Iranian oil and gas industries above which sanctions would be imposed. The specified limit was \$40 million. Shortly after the sanctions act was modified to include Libya as well.

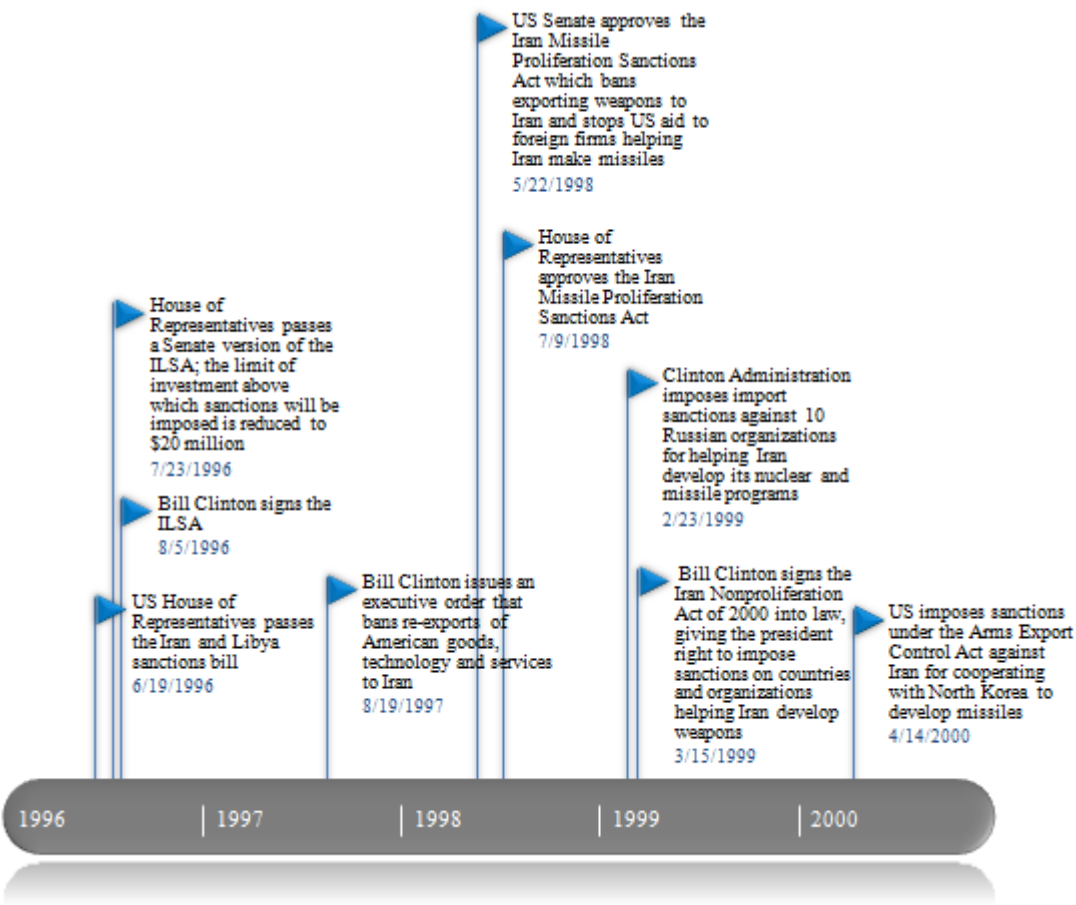


Figure 3. US economic sanctions against Iran (1996-2000)

Source: *Case Studies in Economic Sanctions and Terrorism* by Hufbauer et al., 2012.

In mid-1996, the US House of Representatives passed the Iran and Libya sanctions bill. Shortly thereafter, the House of Representatives passed a Senate version of the same bill which became known as the Iran and Libya Sanctions Act (ILSA). The Iran and Libya Sanctions Act was renamed the Iran Sanctions Act (ISA) in 2006 as it no longer applied to Libya. The ILSA authorized the US to sanction foreign firms. It reduced the limit of investment by foreign companies above which sanctions would be triggered to \$20 million. Shortly afterwards President Clinton signed the act.

A year later, in mid-1997, President Clinton issued an executive order that banned re-exporting American goods and services to Iran. In mid-1998, the two houses of the US Congress approved one after another the Iran Missile Proliferation Sanctions Act which denied export licenses to shipping weapons to Iran. The act also stopped American aid to firms in other countries that were helping Iran produce missiles.

Russia has often undermined US sanctions against Iran. In early 1999, the White House inflicted sanctions against ten Russian companies that assisted Iran develop its missile and nuclear programs. Later that year Bill Clinton signed the Iran Nonproliferation Act of 2000 into law which gave the president the right to impose sanctions on countries and organizations helping Iran to develop weapons. Despite the US sanctions, Iran went ahead with its missile and nuclear programs with help from Russian and North Korea. The US continued to impose more and more sanctions on Iran. In 2000, the US enacted sanctions against the country under the Arms Export Control Act for cooperating with North Korea to develop missiles.

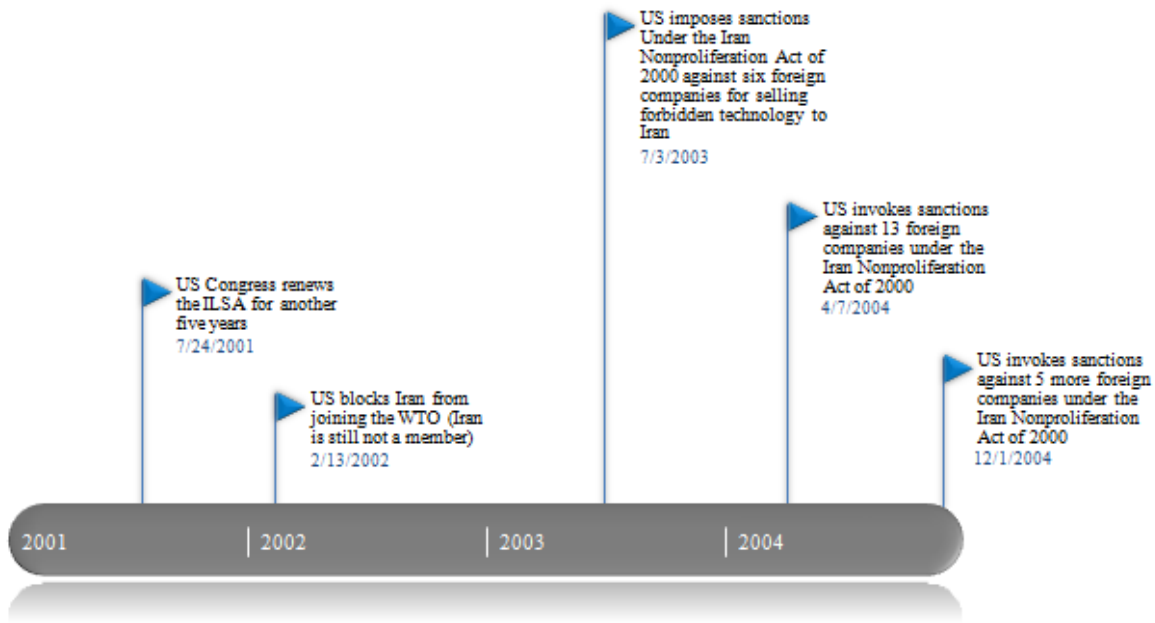


Figure 4. US economic sanctions against Iran (2001-2005)

Source: *Case Studies in Economic Sanctions and Terrorism* by Hufbauer et al., 2012.

In 2001, the US Congress renewed the ILSA for another five years. A year later the US blocked Iran from joining the World Trade Organization. As of 2013, Iran still has not joined the WTO and remains the largest economy outside the organization. In 2003-2004, the US enacted sanctions under the Iran Nonproliferation Act of 2000 against twenty four foreign companies in total.

In June 2006, the US Treasury Department froze the assets of four Chinese companies for purportedly helping Iran's ballistic-missile programs. US citizens were banned from doing business with these companies. Two months later, two Russian and five foreign companies were sanctioned for providing Iran with materials that could be used in making unconventional weapons. In September 2006, President Obama banned the Iranian Bank Saderat's access to US financial system. The bank was accused of helping the transfer of millions of dollars to terrorist organizations, including Hezbollah and Hamas.

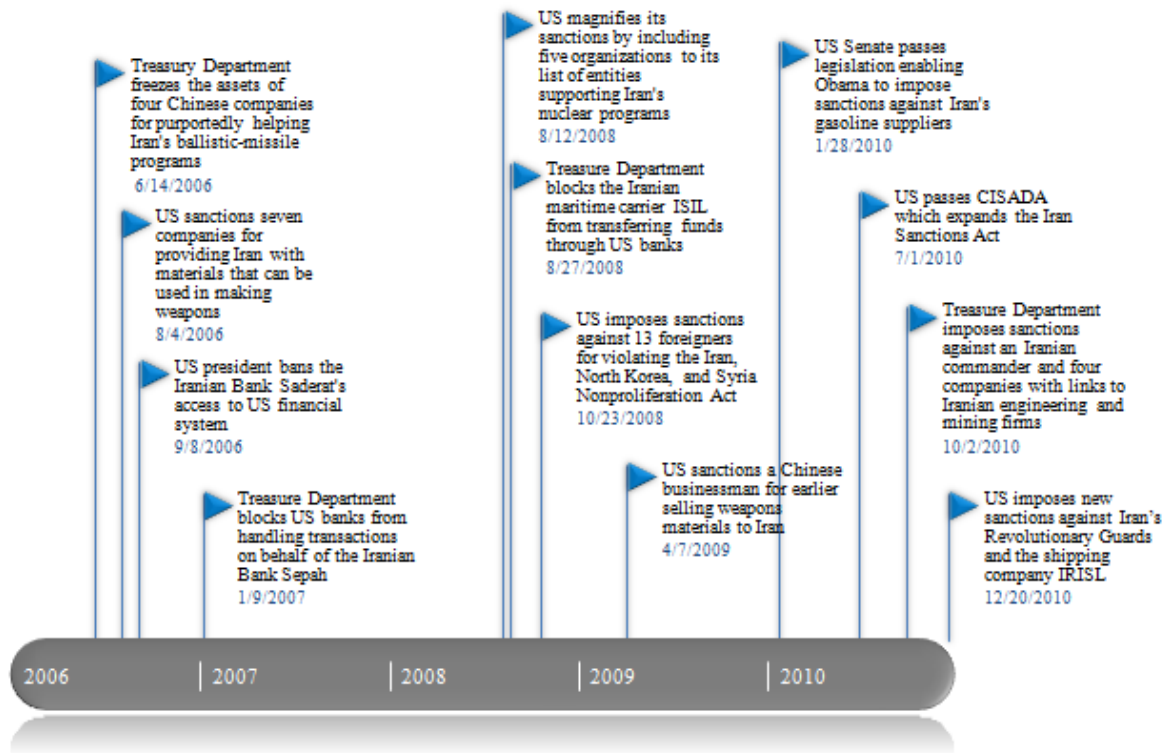


Figure 5. US economic sanctions against Iran (2006-2010)

Source: *Case Studies in Economic Sanctions and Terrorism* by Hufbauer et al., 2012.

At the beginning of 2007, the Treasury Department blocked US banks from handling transactions on behalf of the Iranian state-owned Bank Sepah. In August 2008, five organizations were included into the list of entities supporting Iran's nuclear program. Later that month the Treasury Department blocked the Iranian maritime carrier ISIL from transferring funds through US banks. In October 2008, the US imposed sanctions against thirteen foreigners for violating the Iran, North Korea, and Syria Nonproliferation Act. In April of 2008, the US sanctioned a Chinese businessman for previously selling weapons materials to Iran.

In early 2010, the US Senate passed legislation enabling President Obama to impose sanctions against Iran's gasoline suppliers. On July 1, the Comprehensive Iran Sanctions, Accountability and Divestment Act of 2010 (CISADA) was passed. CISADA extended the date on

which the Iran Sanctions Act will sunset to December 31, 2016. The ISA had been renewed twice before, in 2001 and 2004. CISADA also restored the ban on Iran's exports of non-oil goods such as pistachios and carpets which had been alleviated at the turn of the century. In October 2010, the Treasury Department imposed sanctions against an Iranian commander and four companies with links to Iranian engineering and mining firms. At the end of 2010, the Iranian Revolutionary Guard Corps (IRGC)² and the shipping company the Islamic Republic of Iran Shipping Lines (IRISL) were subjected to US sanctions.

In May 2011, seven energy companies were sanctioned by the US for supplying Iran with gasoline and other petroleum products. A month later the Iranian air and port operator Tidewater Middle East Co. was sanctioned for helping the IRGC move weapons in the region. In October 2011, another Iranian airline, Mahan, was sanctioned for assisting the IRGC in its activities. On the last day of 2011, President Obama signed the National Defense Authorization Act for 2012 (NDAA). Section 1045 of the act specified new sanctions against Iran. The act banned foreign banks that do business with the Central Bank of Iran from opening accounts in the US. Importers of Iranian oil were encouraged to reduce their purchases to get exemptions from the sanctions established by the NDAA. So far twenty countries have been exempted from sanctions specified in the NDAA for reducing their oil imports from Iran. It has not been specified just how much reduction is enough to be exempted from the sanctions.

² The IRGC is a branch of the armed forces of Iran that was established to protect the country from internal and external threats. The organization is also called the Iranian Revolutionary Guards (IRG) or simply the Revolutionary Guards. The IRGC plays an important role in Iran's political and economic life. It is involved in Iran's nuclear program and helps the Iranian government suppress pro-democracy supporters in Iran. See, for example, Katzman (2013).

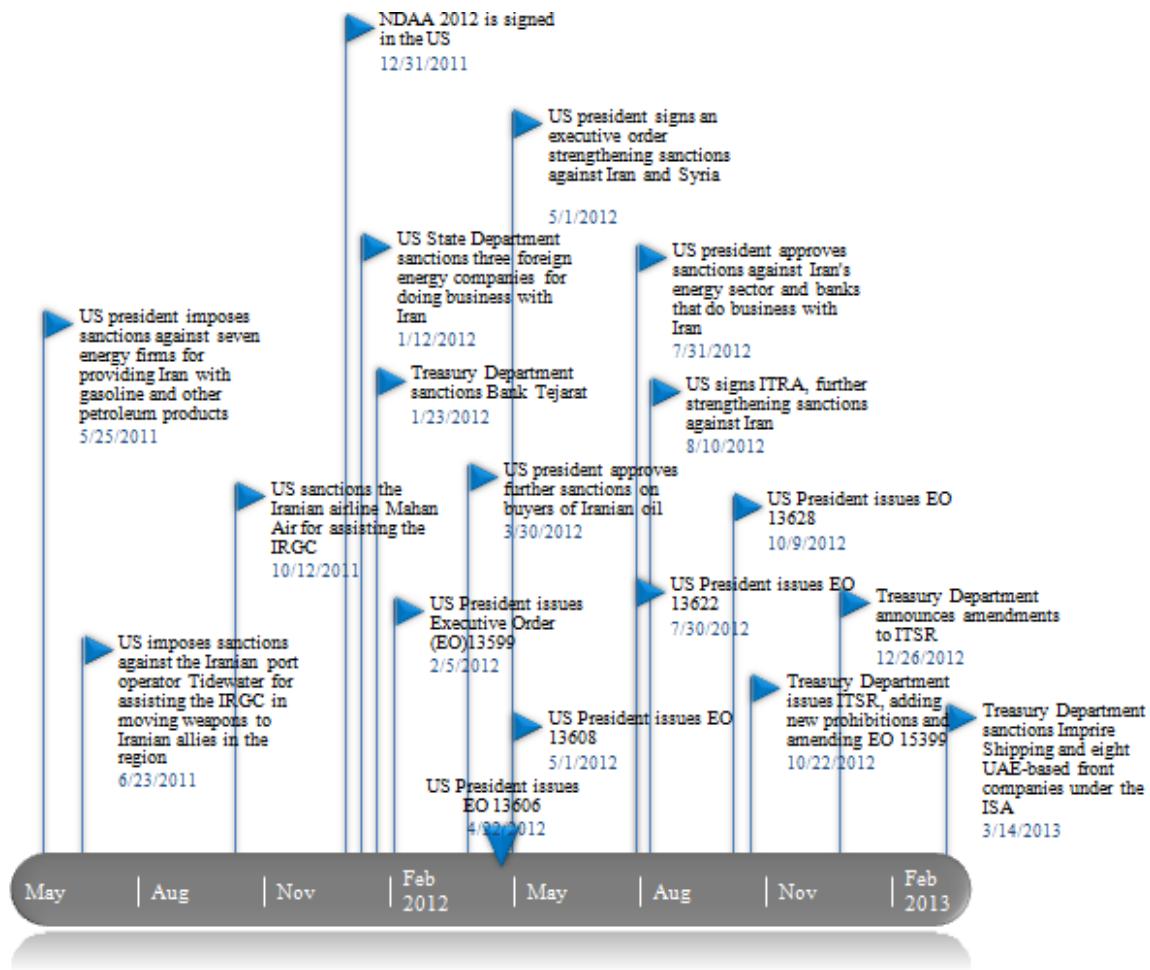


Figure 6. US economic sanctions against Iran (2011-present)

Source: *Case Studies in Economic Sanctions and Terrorism* by Hufbauer et al., 2012; own research for the period starting from July 2012

The year 2012 started with the US sanctioning three foreign energy companies for doing business with Iran. Ten days later the US Treasury Department sanctioned the Iranian Bank Tejarat for providing services to entities involved in Iran's nuclear and missile programs. At the end of April, the US President approved further sanctions on buyers of Iranian oil.

President Obama approved sanctions against Iran under CISADA at the end of July 2012. This time the sanctions targeted Iran's energy sector and financial institutions that carry out business

with Iran. Specifically, the Bank of Kunlun in China and the Elaf Islamic Bank in Iraq were sanctioned for providing services to blacklisted Iranian banks.

On August 10, 2012, the Iran Threat Reduction and Syria Human Rights Act of 2012 (ITRA) was signed into law. The act significantly expanded the list of sanctions against Iran. Among other things, the act tied the hands of foreign subsidiaries of US companies by banning any transaction with Iran. It also established a requirement whereby companies issuing securities have to report to the U.S. Securities and Exchange Commission whether they or their affiliates knowingly engaged in sanctionable activities with Iran. The act also significantly strengthened sanctions against Iran's oil and gas sectors.

On October 22, 2012, the US Treasury Department renamed the Iran Transactions Regulations to the Iranian Transactions and Sanctions Regulations (ITSR). The ITSR reinforced previously established regulations and added new prohibitions to the ISA. The regulations also amended parts of Executive Order 13599, which was signed in February 2012. On December 12, 2012, the Treasury Department amended the ITSR, this time prohibiting foreign entities that are owned or managed by US citizens "from engaging in transactions with the GOI [Government of Iran] or any person subject to the GOI's jurisdiction" (Ryan, et al., 2013). Including the sanctions added by CISADA and the ITSA, currently there are a total of twelve sanctions under the ISA. When a company is found to be a violator, the ISA requires the imposition of at least five out of the twelve sanctions on this company. On March 14, 2013, the Treasury Department sanctioned Impire Shipping, its owner Greek businessman Dmitri Cambis, and eight other companies based in the UAE under the ISA for disguising Iranian cargo. Bimeh Markazi-Central Insurance of Iran and Kish Protection and Indemnity were also sanctioned for providing insurance services to the National Iranian Tanker Company (NITC).

During the course of 2012, President Obama issued several executive orders strengthening and clarifying the sanctions against Iran. On February 5, President Obama signed Executive Order 13599, which blocked the property of the Government of Iran, the country's central bank and other financial institutions. On April 22, Executive Order 13606 was signed. This order targeted the Government of Iran for its human rights abuses. The order required all information technology companies to make sure that their products were not being used by the Iranian government to carry out abuses. On May 1, President Obama signed Executive Order 13608, which further strengthened sanctions against Syria and Iran. The order also closed some of the loopholes in US sanctions laws. On July 30, President Obama signed Executive Order 13622, which targeted parties that significantly cooperated with the National Iranian Oil Company (NIOC) and Naftiran Intertrade Company. The final executive order, 13628, was signed on October 9 and specified the conditions under which foreign subsidiaries of US companies would be sanctioned. The order was the first implementation of the ITRA, the Iran Threat Reduction and Syria Human Rights Act of 2012.

2.2 UN Sanctions on Iran

The United Nations Security Council has imposed several sanctions against Iran since 2006. After the International Atomic Energy Agency Board of Governors concluded in 2005 that Iran had not complied with its safeguards agreement, the UNSC adopted United Nations Security Council Resolution 1696 on July 31, 2006. The resolution demanded that Iran comply with the requirements of the IAEA and stop its uranium enrichment and reprocessing activities by August 31, 2006 (The United Nations Security Council, 2006, July 31). In response to Resolution 1696, Iranian President Mahmoud Ahmadinejad said he would not yield to “the language of force and threats” and insisted Iran’s nuclear program was for peaceful purposes (“Iran defiant on nuclear deadline,” 2006).

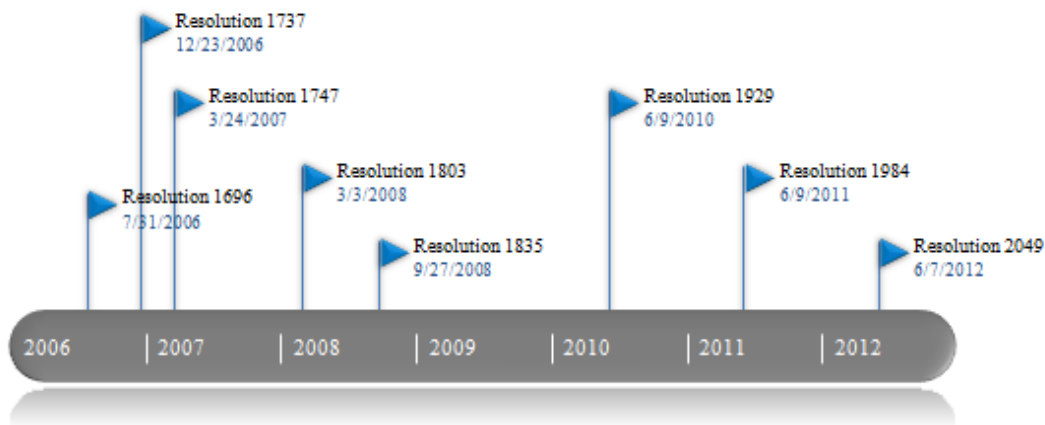


Figure 7. UN sanctions against Iran

Source: the United Nations.

Iran’s failure to halt its uranium enrichment program led to the unanimous passage of United Nations Security Council Resolution 1737 on December 23, 2006, which imposed economic sanctions against the country (The United Nations Security Council, 2006, December 23). Resolution 1737 prohibited the supply of nuclear technology and materials to Iran. It also froze the assets of individuals and companies that were involved in the country’s enrichment program. Iran was given 60 days to stop its nuclear enrichment activities. In response to Resolution 1696, President Ahmadinejad was quoted as saying “I am sorry for you who lost the opportunity for friendship with the nation of Iran. You yourself know that you cannot damage the nation of Iran an iota” (“Ahmadinejad,” 2006, December 24).

Iran disregarded Resolution 1737 and went ahead with its nuclear program. This led to the passage of United Nations Security Council Resolution 1747 on March 24, 2007. Resolution 1747 imposed more stringent economic sanctions on Iran. It put a ban on arms sales to the country and strengthened the asset freezes that were established by Resolution 1737 a year earlier (United Nations Security Council, 2007, March 24). Iran rejected the sanctions, citing its inalienable right to enrich uranium for peaceful purposes. Manouchehr Mottak, who was then the Minister of Foreign

Affairs of Iran, said “The world must know—and it does—that even the harshest political and economic sanctions or other threats are far too weak to coerce the Iranian nation to retreat from their legal and legitimate demands” (“Security Council”, 2007). Several countries took measures in compliance with Resolution 1737. For example, the Rome branch of the Iranian Bank Sepah was taken over in Italy at the end of March 2007.

On March 3, 2008, the UNSC adopted Security Council Resolution 1803 which once again demanded that Iran halt its nuclear enrichment activities. With this resolution the Security Council further expanded freezing the assets of individuals and thirteen organizations involved in Iran’s nuclear activities. The Council also called on all countries “to exercise vigilance over the activities of financial institutions in their territories with all banks domiciled in Iran” (United Nations Security Council, 2008, March 3). Iran once again claimed that its nuclear program was for peaceful purposes and did not abide by the resolution.

Security Council Resolution 1803 was succeeded by United Nations Security Council Resolution 1835. Resolution 1835 was adopted unanimously on September 27, 2008. It reiterated the demands of the Security Council that were outlined in the previous four resolutions (United Nations Security Council, 2008, September 27). Iran was accused of failing to stop its nuclear-enrichment activities and not complying with its obligations. However, Resolution 1835 did not impose new sanctions. Iran yet again dismissed the resolution and stated it would not halt its uranium enrichment programs which it claimed were for peaceful purposes (“UN approves new Iran resolution,” 2008).

On June 9, 2010, the United Nations Security Council adopted Resolution 1929 which further extended the sanctions against Iran. This was the sixth Security Council resolution that addressed Iran’s nuclear program. In addition to reaffirming the five previous resolutions,

Resolution 1929 imposed new sanctions on Iran. It also created a panel of experts to monitor the implementation of the sanctions.

The resolution urged Iran to ratify the Comprehensive Nuclear-Test-Ban Treaty (CTBT) which prohibits carrying out any nuclear explosions, whether for military or civilian purposes. It also called on Iran to comply with the Safeguards Agreement of the IAEA without delay and demanded that the country refrain from further reprocessing uranium. Iran was prohibited from engaging in activities related to ballistic missiles. The new sanctions also banned selling weapons such as tanks, military aircraft, missiles, and warships to Iran. The assets of the IRGC and the IRISL were frozen. The Security Council also urged governments to inspect all cargo going to and coming from Iran. The Security Council called on states to ban the opening of branches of Iranian banks in their territories and refrain from entering into relationships with Iranian banks if there was reason to believe that these activities could somehow contribute to proliferation activities in Iran. Member states were also urged to ban financial institutions from providing Iranian parties with financial services if there was reason to suspect that these services would contribute to Iran's nuclear program.

The Security Council expressed its determination to encourage Iran to comply with all of the resolutions. Resolution 1929 stated that the Security Council was:

“Determined to give effect to its decisions by adopting appropriate measures to persuade Iran to comply with resolutions 1696 (2006), 1737 (2006), 1747 (2007) and 1803 (2008) and with the requirements of the IAEA, and also to constrain Iran's development of sensitive technologies in support of its nuclear and missile programmes, until such time as the Security Council determines that the objectives of these resolutions have been met (United Nations Security Council, 2010, June 9).

Iranian response was the same as before: the country dismissed the new round of sanctions and announced that it would disregard the new sanctions. In reaction to Resolution 1929,

Mohammad Khazaei, the ambassador of Iran to the United Nations, stated that Iran would not change its policy because of the new sanctions. President Ahmadinejad was quoted as saying “I gave one of the [world powers] a message that the resolutions you issue are like a used handkerchief which should be thrown in the dustbin” (“Ahmadinejad”, 2010).

The UNSC adopted United Nations Security Council Resolution 1984 on June 9, 2011. This resolution did not impose new sanctions. Instead, it extended the mandate of the expert panel that monitors sanctions against Iran until June 9, 2012. The resolution called on

“all States, relevant United Nations bodies and other interested parties, to cooperate fully with the Committee established pursuant to resolution 1737 (2006) and the Panel of Experts, in particular by supplying any information at their disposal on the implementation of the measures imposed by resolution 1737 (2006), resolution 1747 (2007), resolution 1803 (2008), and resolution 1929 (2010)” (United Nations Security Council, 2011, June 9).

The most recent UNSC resolution on Iran, namely, United Nations Security Council Resolution 2049 was adopted on June 7, 2012. With this resolution the Security Council extended the mandate of the expert panel until July 9, 2013. The resolution requested the panel to submit a “final report to the Committee no later than 30 days prior to the termination of its mandate with its findings and recommendations” (United Nations Security Council, 2012, June 7). As of May 2013, the final report has not yet been submitted.

2.3 EU Sanctions on Iran

European countries have inflicted joint sanctions against Iran through the European Union. The European Union initially opposed imposing unilateral sanctions against Iran. However, EU stance on sanctioning Iran has changed noticeably. In recent years, EU sanctions on Iran have become almost as extensive as US sanctions.

In March 2012, the EU passed Council Decision 2012/152/CFSP which banned the provision of financial communication services to exchange data with the Central Bank of Iran and some other banks in the country. The decision led the Brussels-based electronic payment provider SWIFT³ to stop providing services to certain Iranian banks. As a result, buyers of Iranian oil faced new difficulties when paying for their oil purchases. Effective from July 1, 2012, the EU announced an embargo on Iranian oil. This has significantly reduced Iran's oil exports.

2.4 Sanctions by Other Countries

Until 2006, the economic sanctions of the US were undermined by a lack of international cooperation. Since 2006, however, international economic sanctions against Iran have reached an unprecedented level. As discussed above, the international community has imposed sanctions against Iran through the United Nations Security Council.

While the US been the most ardent advocate to use sanctions to influence Iran's policies, certain individual countries have also imposed economic sanctions against Iran. Australia, Canada, Croatia, France, Japan, South Korea, Switzerland, and the United Kingdom—all have imposed unilateral sanctions condemning Iran's nuclear program. These countries have used a whole range of sanctions from asset freezes to trade sanctions.

Different countries have shown different levels of support for sanctioning Iran. Israel has been calling for tougher sanctions. Japan and South Korea have imposed sanctions almost as extensive as US sanctions. China and Russia, however, have shown only limited support.

Ever since the Islamic revolution of 1979, Iran has been hostile towards Israel. Since Mahmoud Ahmadinejad became president of Iran in 2005, tensions between Iran and Israel have

³ SWIFT stands for Society for Worldwide Interbank Financial Telecommunication.

risen even further. Some believe that a clash between the two states is not an unlikely outcome (“Oil Sanctions on Iran,” 2012). The Israeli government remains largely skeptical about the effectiveness of economic sanctions alone in forcing the Iranian government to change its nuclear policy. Israel has been actively advocated for taking more drastic measures to halt Iran’s nuclear ambitions.

Russia, China, and India have often condemned the use of economic sanctions against Iran. Moscow has generally opposed imposing unilateral sanctions against any country. Russian leaders have been less critical of Iran’s nuclear program than their US counterparts. The Russian government has actually cooperated with Iran in the nuclear energy sector. Russia helped Iran build its first nuclear power plant at Bushehr. More recently, however, Moscow has given lukewarm support for sanctioning Iran.

China has generally opposed the use of sanctions against Iran, claiming that sanctions will not help solve the issue of Iran’s nuclear program. China historically has opposed putting pressure on any independent nation. The country has traditionally regarded sovereignty as “a sacred ideal deserving to be safeguarded” (Shen, 2008, p. 97). China and India continue to import Iranian oil. However, to get exemptions from US sanctions, both countries have tried to reduce their imports of crude oil from Iran.

To summarize, the US has imposed economic sanctions against Iran since the early 1980s. While the first sanctions against the country were imposed to respond to the hostage crisis, later they were used to stop Iranian support for terrorism. More recently the US has enacted sanctions to force Iran’s leaders to scrap their nuclear program. Since the mid-2000s, the US has enjoyed the support of the international community in sanctioning Iran for its nuclear ambitions.

Even though some countries’ failure to fully cooperate in sanctioning Iran has blunted the impact of the sanctions on the Iranian economy, the country is undoubtedly experiencing economic

hardships. An important question is just how much damage has been inflicted on the Iranian economic by the plethora of economic sanctions that have been imposed against the country. This issue is addressed in the next chapter.

CHAPTER 3: ECONOMIC SANCTIONS AND THE IRANIAN ECONOMY

Scholars at the International Monetary Fund have classified the Iranian economy as a transition economy, that is, an economy undergoing the process of transition from a centrally-planned to a free market economy (Jbili, Kramarenko, & Bailén, 2007). Even though a large portion of light industry has been privatized, the Government of Iran still manages most of heavy industry (Hooglund, 2008).

The economy of Iran is rife with inefficiencies. Administrative controls and generous subsidies have strained the state purse. Nepotism and rampant corruption remain a serious obstacle to growth. According to Transparency International, an independent nonprofit organization dedicated to exposing and fighting corruption, Iran was the 133rd least corrupt country in the world out of the 176 surveyed in 2012. The same position was occupied by such countries as Comoros, Guyana, Honduras, Kazakhstan, and Russia. The banking system of Iran also has many problems. Currently an estimated 18 percent of all assets in the country's banking system are said to be nonperforming (Amuzegar, 2013).

In recent years, international sanctions have exacerbated Iran's economic problems. Although economic sanctions have not stopped Iran from supporting terrorist organizations and Iran is still pursuing its nuclear program, the sanctions have made the Iranian nuclear program more costly and have inflicted very high costs on the Iranian economy at large. Although it is difficult to disentangle causality, sanctions have undoubtedly contributed to Iran's economic difficulties.

Economic sanctions by the West against Iran have reached unprecedented levels in recent years. While there is a general consensus that the sanctions have placed a burden on the Iranian economy, there is much disagreement about just how much of the country's economic difficulties

can be attributed to sanctions. Consequently, there are opposing views on whether the mounting sanctions against Iran can eventually force the country to change its nuclear policy.

3.1 Main Macroeconomic Indicators

The recent sanctions against Iran have undoubtedly contributed to the country's economic hardships. Iran has felt the impact of sanctions on its economy for a long time. The strengthening of sanctions by the US and EU in 2012 has hit the Iranian economy particularly hard. It is important to note that Iran's economic problems are first and foremost a result of economic mismanagement and widespread corruption within the country itself (Hufbauer & Schott, 2006; Katzman, 2013; Plaut, 2013). The contribution of sanctions to the country's economic problems has been only partial and should not be overestimated. Still, the significant tightening of sanctions in 2012 has been very pronounced.

3.1.1 GDP



Figure 8. Iranian GDP at constant prices, billions of Iranian rials

Source: World Economic Outlook database. Note: Latest actual data are from 2010. Figures for the years 2011 through 2015 are estimates by the IMF.

Figure 8 shows Iranian GDP at constant prices, expressed in billions of Iranian rials from 1980 to 2015. The data were taken from the April 2013 World Economic Outlook database of the IMF. The values for the years 2011-2015 are estimates by the IMF. The data in the World Economic Outlook are usually taken from the Central Bank of Iran and thus should be taken with a pinch of salt. The reason is that even though the Iranian central bank has traditionally been the sole source of economic data for the county, the official data provided by the bank is questionable at best. The OECD and the World Bank also rely on Iranian national data while generating their indicators. Therefore, IMF and World Bank offer similar economic indicators for Iran.

A major effect of the recent toughening of sanctions was to cause Iran's GDP to contract. According to IMF estimates, Iranian GDP declined by 1.88 percent in 2012, in sharp contrast to 2011 when GDP expanded by 3.03 percent. This is the first time Iranian GDP has contracted since 1994, as can be seen in Figure 9. The IMF forecasts that the Iranian economy will contract again in 2013 by 1.25 percent. The economy is expected to bounce back and grow slightly in 2014 and 2015 by 1.09 and 1.98 percent, respectively.

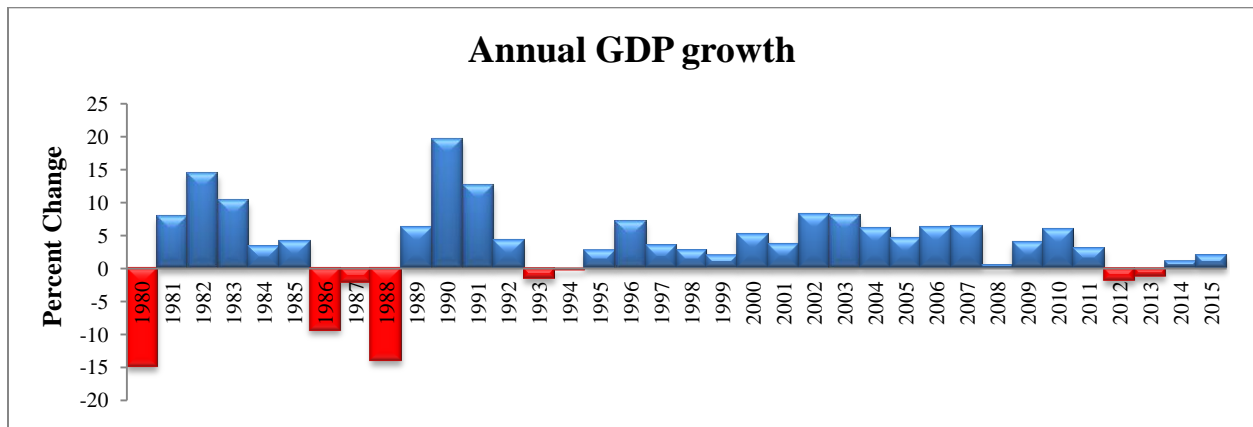


Figure 9. Annual percentage changes in constant price GDP

Source: World Economic Outlook database. Note: Latest actual data are from 2010. Figures for the years 2011 through 2015 are estimates by the IMF.

3.1.2 Inflation

Economic sanctions have also exacerbated inflation in Iran. When Iran was subjected to economic sanctions for the first time in the late 1970s, average annual inflation rates were already above 20 percent. Since that time the country has had volatile and high inflation rates. In 1995, average annual inflation rate reached 50 percent. Since that time the country has persistently experienced double-digit inflation rates.

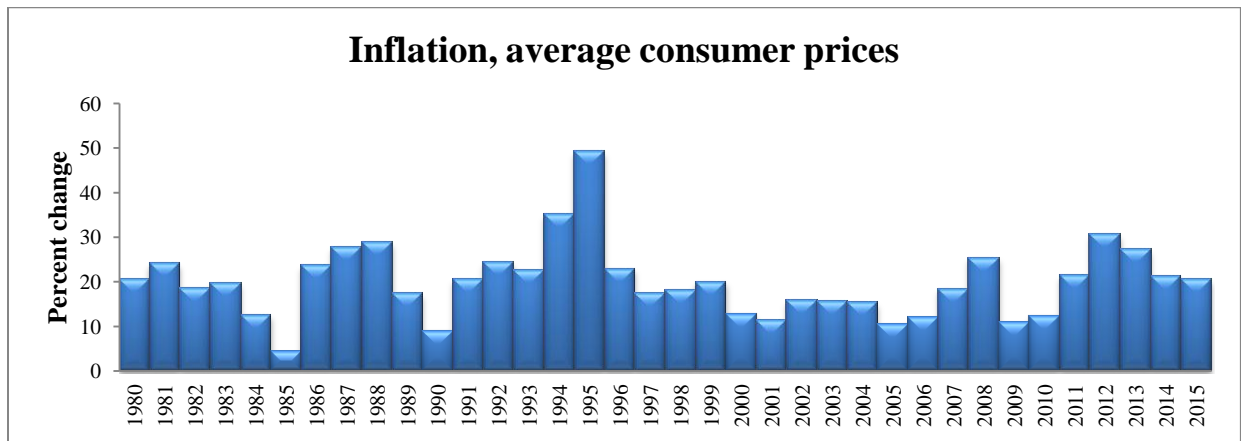


Figure 10. Average annual inflation rate, consumer prices

Source: World Economic Outlook database. Note: Latest actual data are from 2011. Figures for the years 2012 through 2015 are estimates by the IMF.

In the fall of 2012, Iranian inflation reached hyperinflation levels. Using market-based data, Steve Hanke of the Johns Hopkins University estimated that the annual inflation rate in 2012 was 110 percent (2013). This is more than three times higher than the IMF estimate of 30.6 percent. High inflation triggered riots in October 2012 in the country.

Both the imposition of sanctions and the cancellation of government subsidies have been the likely cause of rising prices in Iran. The Government of Iran has subsidized basic foodstuffs, energy products, and utilities since the early 1980s. These subsidies have been a large burden on government finances. As a result, the Iranian government has largely abolished subsidies and plans

to replace them with targeted subsidies. However, the cancellation of government subsidies worsened Iranian inflation and unemployment (Nikou, n.d.; Plaut, 2013).

After reprieving for a short while at the end of 2012, inflation started to increase again in early 2013. The Statistics Center of Iran reported that Iran's inflation rate was 29.8 percent in the period from March 21 to April 20 ("Inflation rate hits 29.8%," 2013). However, according to press reports, the real rate of inflation is most likely much higher than officially reported rates ("Oil sanctions on Iran," 2012). Some economists have stated that currently actual inflation is anywhere between 50-70 percent (Katzman, 2013).

3.1.3 Currency depreciation

Depreciation and inflation usually go hand-in-hand. Rising inflation has resulted in large-scale depreciation of the Iranian rial. The market value of the rial has declined significantly since the tightening of sanctions in 2012. The fall in the value of the rial hurt Iran's ability to import and this in turn caused the currency to fall even further.

The value of the Iranian rial fell significantly in 2012. In early October of 2012, the rial barely escaped a total collapse: the unofficial value of the rial plunged to about 35,000-40,000 per one US dollar, nearly three times higher than the official estimate. The plunging of the rial caused demonstrations in Tehran. The Iranian government quickly dispersed the crowds and threatened to arrest money traders in unofficial markets. In April 2013, the value of the rial in unofficial markets was reported to be 39,000 to one US dollar (Katzman, 2013).

Some analysts hold that the depreciation of the rial has reduced Iran's hard currency reserves (Plaut, 2013). However, there is no reliable data on the amount of Iran's foreign reserves. Iranian

officials claim that the country's stock of foreign reserves has stayed the same since 2011, but the accuracy of these claims cannot be verified.

The government of Iran has taken measures to try to defend the rial. It has maintained different exchange rates for different transactions. An exchange center has been established for this purpose. The government has also threatened to arrest unofficial currency traders. However, these efforts have proved futile as unofficial rates remain extremely low. Multiple exchange rates have actually created more problems as they are determined rather arbitrarily. Iranian officials have been reported to be exploiting the difference between the official and unofficial rates to generate arbitrage profits (Lakshmanan & Nasser, 2011).

3.1.4 Unemployment

Iran has suffered from double-digit unemployment rates in recent years. According to the IMF, unemployment rose slightly from 12.34 percent in 2011 to 12.47 percent in 2012. The IMF forecasts unemployment will continue to grow in Iran in the next few years. According to press reports, unemployment is well above these figures (Tait, 2012; George & Hosseinian, 2012).

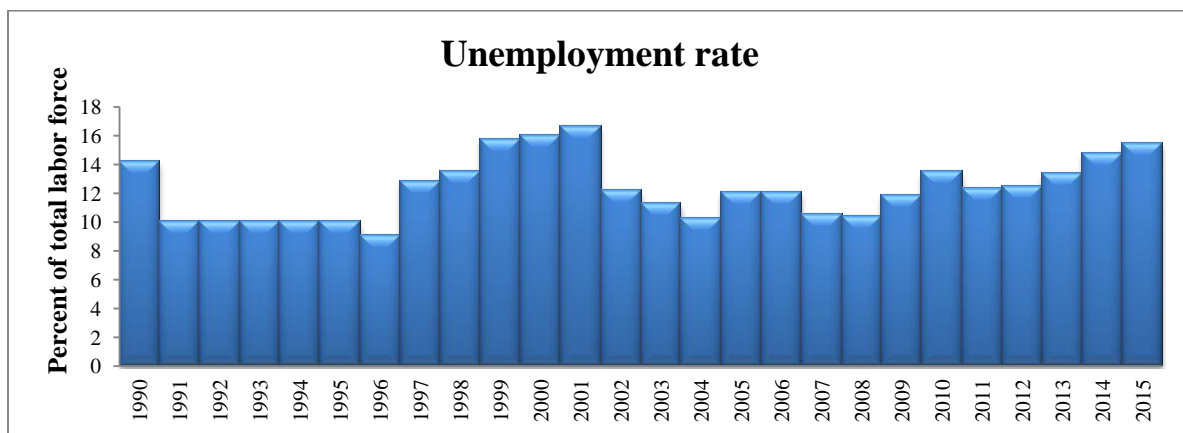


Figure 11. Unemployment rate

Source: World Economic Outlook database. Note: Latest actual data are from 2010. Figures for the years 2012 through 2015 are estimates by the IMF.

According to Katzman (2013), the Iranian unemployment rate was about 20 in April 2013. Several news publications reported similar figures for May 2013 (Hedges, 2013). These numbers are significantly higher than both official figures and IMF estimates. Like Iran's other economic problems, high unemployment is due to a combination of economic mismanagement and, at least to some extent, increasingly stringent international economic sanctions.

3.1.5 The cost of sanctions

Calculating the costs of economic sanctions on a target country remains a major challenge among economists. As Hufbauer et al. point out, "few studies go beyond anecdotal accounts of the costs that economic sanctions impose on target countries" (2007, p. 101). Still, using their judgment, Hufbauer et al. developed a model to estimate the welfare loss of sanctions on a target country using the notions of consumer and producer surplus. According to their estimates, in the period from 1984 until 2005, the US sanctions against Iran created an average welfare loss of about \$80 million per year (2012). This amount is negligible compared to the Iranian GDP in the corresponding period. In the period from 2006 until 2012, the US, UN, and EU sanctions have resulted in an annual welfare loss of \$5.7 billion. This is about 1 to 3 percent of the Iranian GDP in the 2006-2012 period.

Thus, the effect of the economic sanctions on Iran has not been devastating and the country is not on the verge collapse. In fact, Iran has been adjusting to the sanctions to mitigate their effect. The country has found alternative ways to exports its oil. The country has resorted to providing its own insurance to oil shipments and has started using barter arrangements where necessary.

3.2 Iranian Oil Industry Under Sanctions

Oil was found for the first time in Iran in 1908. Until the Islamic Revolution, Iranian oil was produced mostly by Western companies. After the revolution the Government of Iran took a hostile

approach towards foreign companies and brought oil production under its control. The post-revolution constitution bans foreign or private parties from owning Iran’s natural resources.

With an estimated 154 billion barrels, currently Iran has the world’s fourth largest oil reserves (“Iran,” 2013). This amounts to about nine percent of all proven oil reserves in the world. Only three countries have more oil reserves than Iran, namely, Venezuela, Saudi Arabia, and Canada.

Iran’s oil and gas exports account for the biggest share of government revenue. According to the Economist Intelligence Unit, crude oil exports make up about 80 percent of Iranian export revenue and around 50 percent of total government earnings (“Oil sanctions on Iran,” 2012). Therefore, Iran’s energy sector has been a major target of recent economic sanctions against the country. By sanctioning Iran’s oil industry the sender countries intend to undermine the main source of revenue of the Iranian government.

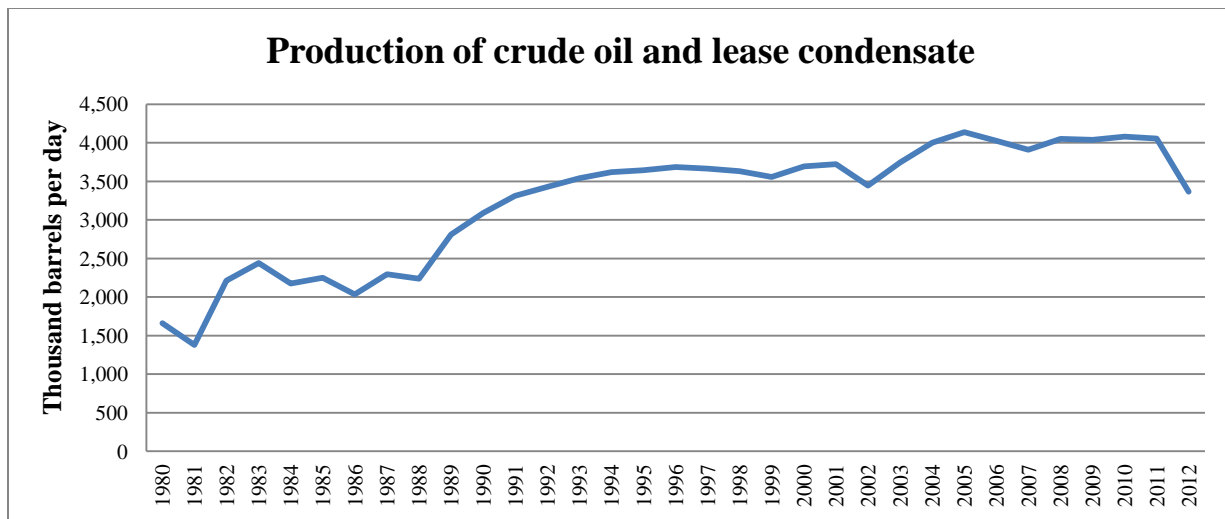


Figure 12. Production of crude oil including lease condensate

Source: The U.S. Energy Information Administration.

Iran’s oil production reached record high levels of about 6 million barrels per day in the mid-1970s (“Oil sanctions on Iran,” 2012). The country has not reached such high levels of production

ever since then. In the 1980s, Iranian oil production remained at low levels largely because of the Islamic revolution of 1979 and the subsequent Iran-Iraq War.

After the war ended in 1988, Iran's oil and lease condensate⁴ production rose rapidly, as can be seen in Figure 12. Production increased from 2.24 million barrels per day in 1988 to 3.54 million barrels per day in 1993. After this initial rapid recovery, the growth in production slowed down and rose gradually until reaching a peak of 4.14 million barrels per day in 2005. From 2006 to 2007, Iranian oil production declined to 3.91 million barrels per day. From 2008 until 2011, production faltered at about 4 million barrels per day.

The toughening of sanctions against Iran in 2012 has had a significant negative effect on the country's ability to produce and export oil. The new sanctions caused a sharp decline in the production of crude oil and oil condensate. Total oil and condensate production fell from 4.05 million barrels per day in 2011 to 3.37 million barrels per day in 2012. Most of this fall in production can be directly attributed to sanctions ("Oil sanctions on Iran," 2012; "Iran," 2013). Interestingly, although Iran's oil production fell by 17 percent in 2012, total worldwide oil production actually rose by 2 percent during the same period ("Sanctions reduced Iran's oil exports and revenues", 2013).

While Iran's production of oil fell by about 17 percent from in 2011-2012, its exports of oil fell even more. In 2012, Iranian exports of crude oil and condensate decreased to about 1.5 million barrels per day, a 39 percent decline. This is the lowest level of oil exports since 1986, as can be seen in Figure 13. Since Iranian oil exports fell more than production, the country is reportedly storing the excess oil. "It has been estimated that a significant amount of NITC's tanker capacity is being

⁴ The U.S. Energy Information Administration defines lease condensate as a "mixture consisting primarily of hydrocarbons heavier than pentanes that is recovered as a liquid from natural gas in lease separation facilities" ("Lease," n.d.).

used to store surplus oil that cannot be exported owing to sanctions (“Oil sanctions on Iran,” 2012, p.12).

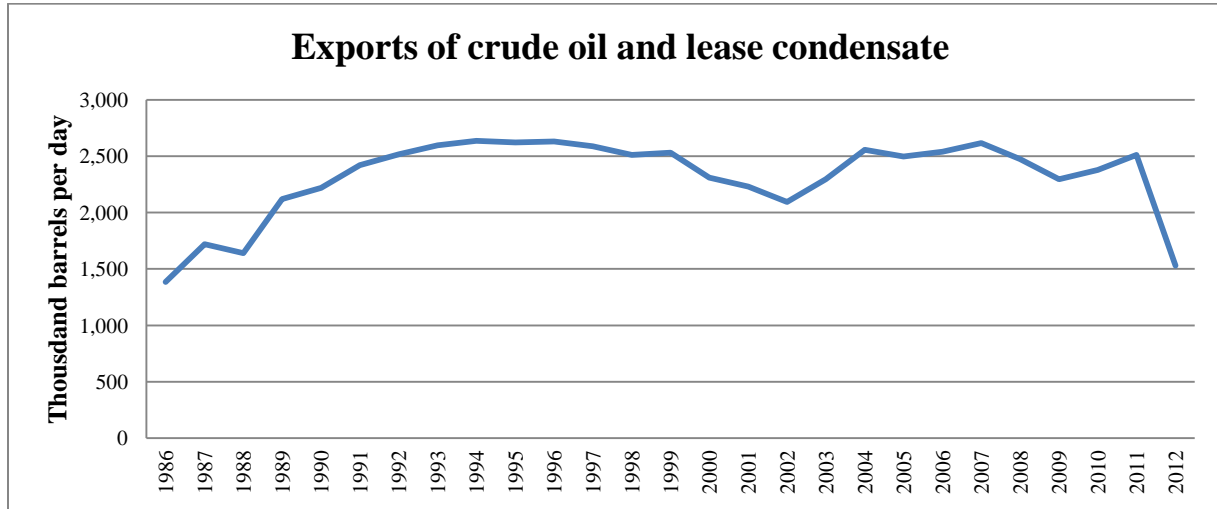


Figure 13. Exports of crude oil including lease condensate

Source: The U.S. Energy Information Administration.

Since some of the sanctions prohibited major insurers in Europe from providing insurance and reinsurance to Iranian companies, Iran is facing new obstacles when exporting oil. Both the US and EU have imposed sanctions prohibiting protection and indemnity clubs (P&I clubs) in Europe from providing insurance services to importers of Iranian oil. Given the fact that insurers based in Europe reportedly cover about 90-95 percent of oil tanker shipments in the world, the sanctions have seriously crippled Iran’s ability to export (“Oil sanctions on Iran,” 2012; “Iran,” 2013). In addition, sanctions have blocked Iran’s access to use the international financial system and thus have made buying Iranian oil very problematic.

Iran is located in the Persian Gulf next to the Strait of Hormuz, which is a major transit route for oil shipments. Therefore, uncertainty about Iran’s oil exports causes world oil prices to fluctuate. However, even though Iranian oil exports declined significantly in 2012, world oil prices did not rise substantially. This can be attributed to “the sluggish performance of the global economy,

which is making only a patchy recovery from the financial crisis of 2008-09 (“Oil sanctions on Iran,” 2012, p. 15). Since the fall in Iranian exports did not cause world oil price to rise steeply, falling exports meant falling revenue for Iran. While the country generated oil export revenues of \$95 billion in 2011, the corresponding figure was much lower in 2012. Due to falling exports, Iran’s net oil export revenue amounted to about \$65 billion in 2012.

Another major impact of international sanctions has been to significantly reduce investment in Iran’s oil and gas industries. Both the US and EU have enacted sanctions that significantly restrict exporting equipment and technology that can be used to explore, produce, and refine oil and gas. The US has also enacted sanctions that ban companies that are owned or managed by American citizens from participating in large-scale investment projects in Iran. Iran is not a significant exporter of gas. Still, its gas sector has also been targeted with sanctions in recent years.

The poor investment environment and international economic sanctions targeting the Iranian oil sector have discouraged international companies from investing in Iran. Almost all Western companies that were involved in the country’s oil and gas sectors have stopped their operations in Iran and others are disinvesting. The sanctions have also delayed and in some cases stopped oil development programs in Iran (“Iran,” 2013). The decline in investment in Iran’s energy sector has been substantial:

Reported major investments in the Iranian energy sector dropped from an average of \$20 billion per year in 2006-09 (though highly variable from year to year) to just under \$3 billion in 2010-11, though some of that could be due to delays in reporting. In addition, several of those deals have been cancelled or delayed due to sanctions or to financing problems created by sanctions so that the difference between the value of deals reported and the value of those that appear to be going forward was \$50 billion, cumulatively, over the period 2006-11 (Hufbauer et al., 2012, p. 96).

In sum, the international sanctions against Iran have imposed a large burden on the country's economy. However, the sanctions have only partially contributed to the country's economic woes. Most of the economic problems of Iran have been largely caused by internal economic mismanagement. This raises some skepticism about whether economic sanctions can succeed in forcing Iran to abandon its nuclear program. Before answering this question, it will be useful to review historical episodes where sanctions were used to halt nuclear proliferation.

CHAPTER 4: ECONOMIC SANCTIONS AND NUCLEAR PROLIFERATION:

HISTORICAL EPISODES

During the past four decades, the US, Canada, and more recently the UN and EU have used economic sanctions to impede nuclear proliferation across the world. The use of sanctions has had various degrees of success in preventing countries from developing nuclear weapons. While in a few cases sanctions have successfully forced governments to relinquish their nuclear programs, in most cases sanctions have had little to no success in stopping proliferation.

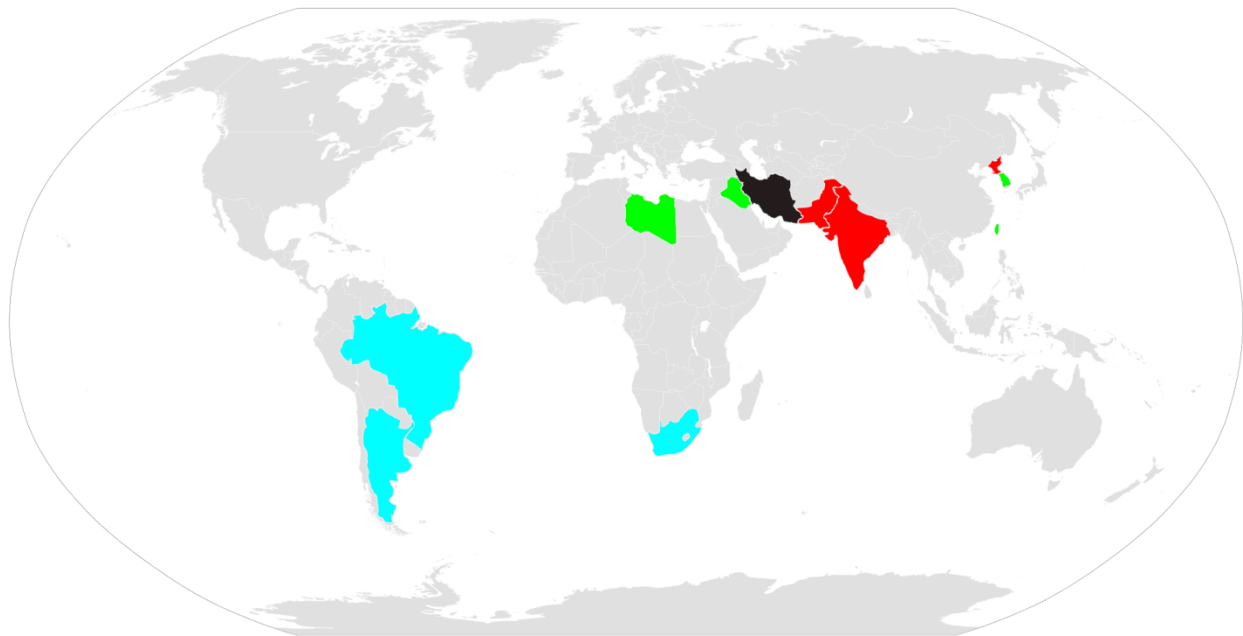


Figure 14. Historical episodes of economic sanctions against nuclear proliferation

- Sanctions played a major role in preventing nuclear weapons development (South Korea, Taiwan, Libya, and Iraq)
- Sanctions played a limited role in preventing nuclear weapons development (South Africa, Brazil, and Argentina)
- Sanctions did not prevent nuclear weapons development (India, Pakistan, and North Korea)
- Will sanctions prevent nuclear weapons development? (Iran)

Note: Created using the case studies in *Economic Sanctions Reconsidered* by Hufbauer, Schott, Elliot, and Oegg, 2008.

In this chapter, I will discuss all major historical cases where economic sanctions were imposed to prevent countries from acquiring nuclear weapons. Relying largely on the work of

Hufbauer et al. (2007), I will review these cases by dividing them into successful, partially successful, and unsuccessful sanctions episodes. Deriving lessons from historical sanctions episodes where the goal was to halt nuclear proliferation will help me determine whether economic sanctions can be effective in the case of Iran.

A word of caution seems appropriate regarding classifying sanctions episodes as “successes” or “failures”. The reason is that the outcome of every episode can be questioned. It is not possible to know the whole story behind nuclear programs as governments rarely disclose all the information about their weapons programs. Even when much information is available about a particular case, it is very difficult to determine the contribution of sanctions to the outcome of that case. In some cases sanctions stop a target country’s nuclear ambitions only temporarily. This further complicates determining the outcome of sanctions episodes. Still, commentators seem to agree on their evaluation of most of the sanctions cases discussed below.

4.1 Successful Sanctions Episodes

In the mid-1970s, while negotiating with the US and Canada to get loans in order to build nuclear reactors for peaceful purposes, South Korea expressed its desire to develop nuclear weapons. The country sought to receive reprocessing facilities from France. The US and Canada jointly took action to hamper South Korea’s quest to develop nuclear weapons. They exerted pressure by changing the terms of financing for building the civilian nuclear reactors in South Korea. The country dropped its nuclear weapons research program in 1975. Thus, the US and Canada successfully prevented South Korea from buying a nuclear processing plant by applying financial pressure (Hufbauer, et al., Case 75-1, 2008).

Economic sanctions have also been successfully used to prevent Taiwan from developing nuclear weapons (Hufbauer, et al., Case 76-2, 2008). Taiwan was known to be building nuclear

reactors for peaceful purposes. However, later it became known that the country was also secretly trying to develop nuclear reprocessing facilities. The US, which was the only country supplying Taiwan with reactors and processed uranium, imposed export sanctions against the country by delaying the supply of nuclear material. In 1976, Taiwan announced that it had officially stopped its nuclear weapons program.

Libya gave in to pressure by Western nations and stopped its nuclear program in 2003. President Gaddafi's decision to stop the country's nuclear program was "partly influenced by his desire to end the decade-old US sanctions and to gain access to American oil field technology and know-how" (Hufbauer et al., 2007, pp. 12-13). After Libya gave up its nuclear program, the Iran and Libya Sanctions Act of 1996 (ILSA) stopped applying to Libya and was therefore renamed the Iran Sanctions Act (ISA) in 2006.

While by now it has been established that Iraq never had nuclear weapons, many believe that UN sanctions against Iraq played an important role in preventing the country from developing nuclear weapons (Hufbauer et al., 2007). After the US invaded Iraq in 2003, experts concluded that UN sanctions had hampered Saddam Hussein's desire to develop nuclear weapons. However, most likely the effect of the sanctions was temporary: "Many former Iraqi officials close to Saddam either heard him say or inferred that he intended to resume WMD programs when sanctions were lifted. Those around him at the time do not believe that he made a decision to permanently abandon WMD programs" (Iraq Survey Group, 2004).

4.2 Partially Successful Sanctions Episodes

Sanctions played only a small role in South Africa's decision to dismantle its nuclear weapons in 1989 (Hufbauer, et al., Case 75-3, 2008). South Africa announced in the early 1970s that it was enriching uranium to develop nuclear weapons. The country's first and only nuclear power

station, Koeberg Nuclear Power Station, became operational in 1984. Following this the US started to put pressure on South Africa by delaying the supply of nuclear material to be used in the country's research plants. Such measures had already been taken before to force South Africa to improve its human rights record, most importantly to eliminate its apartheid system of racial segregation. The US tried to force the country into signing the Nuclear Non-Proliferation Treaty by withholding the supply of uranium. These efforts did not stop South Africa from developing its nuclear weapons. Eventually, however, the country signed the Nuclear Non-Proliferation Treaty and dismantled its nuclear weapons (Albright, 1994).

Brazil has also shown willingness to join the nuclear club. In the late 1970s, the US single-handedly tried to force Brazil into signing the Nuclear Non-Proliferation Act and prevent the country from becoming a nuclear power. Since the US tried to hamper Brazil's nuclear program only by using limited export sanctions, these efforts had a negligible effect on the country's decision to halt its nuclear program years later (Hufbauer, et al., Case 78-2, 2008). Although Brazil has signed the Nuclear Non-Proliferation Treaty, the country still possesses the technology to develop nuclear weapons (Graham, 2009).

Like in the case of Brazil, economic sanctions played only a limited role in preventing Argentina from becoming a nuclear power in the 1980s (Hufbauer, et al., Case 78-3, 2008). The country built two nuclear reactors to produce energy in the decade from 1973 to 1983. In the early 1980s, the country also started a nuclear weapons program. The US put pressure on Argentina to give up its nuclear weapons program by delaying the delivery of nuclear fuel to the country. Argentina agreed to comply if the US helped the country resolve the dispute with Great Britain over the Malvinas Islands (Rush & Small, 1983). Although following Argentina's invasion of the Malvinas

in 1982 Britain regained control of the islands, Argentina did abandon its nuclear program and sanctions, however small and tangential, played a role in this outcome.

4.3 Unsuccessful Sanctions Episodes

Even though the international community imposed several economic sanctions against India and Pakistan, the efforts failed and both countries eventually developed nuclear weapons (Hufbauer, et al., 2007). After India carried out a test nuclear explosion in 1974, Canada suspended providing the country with nuclear material and decided not to refinance a loan of \$8.5 million to India (Hufbauer, et al., Case 74-2, 2008). In the late 1970s and early 1980s, the US tried to force India into accepting strict nuclear safeguards by not delivering nuclear fuel to Indian nuclear power stations (Hufbauer, et al., Case 78-4, 2008). In the late 1990s, tensions between India and Pakistan intensified and the two countries engaged in a nuclear arms race. Both countries carried out more nuclear tests. This race was heavily condemned by the international community.

The US, Japan, Germany, Denmark, and Sweden imposed sanctions against India because of its nuclear activities (Hufbauer, et al., Case 98-1, 2008). Also, the World Bank and G-8 countries decided to suspend non-humanitarian lending to both India and Pakistan. Despite these assorted efforts, India went ahead with its nuclear program. Currently the country has between 80-100 nuclear warheads (Federation of American Scientists, 2012). As of May 2013, India has not yet signed the Nuclear Non-Proliferation Treaty.

There are many parallels between the cases of India and Pakistan. After India carried out its first nuclear test in 1974, Canada tried to change the behavior of both India and Pakistan. Canada demanded that Pakistan strengthen its nuclear safeguards and agree not to carry out peaceful explosions. Pakistan refused and Canada terminated its cooperation with Pakistan's civilian nuclear program (Hufbauer, et al., Case 74-3, 2008).

The US joined Canada and started imposing sanction against Pakistan in the late 1970s. The US continuously pressured Pakistan not to enrich uranium to weapons-grade levels. Despite the US and Canadian sanctions, Pakistan went ahead with its nuclear program. Economic sanctions against both India and Pakistan failed and the two countries successfully carried out nuclear tests in 1998 (Hufbauer, et al., Case 79-2, 2008).

North Korea signed the Nuclear Non-Proliferation Treaty in 1985. After years of noncompliance, it eventually withdrew from the treaty in 2003. In the mid-1990s, North Korea agreed to abandon its nuclear program in return for getting assistance in building civilian nuclear reactors in the country. The relations between North Korea on the one hand, and Japan, the US, and South Korea, on the other, seemed to be improving. However, relations between North Korea and mainly the US started to fall apart in the early 2000s. North Korea resumed its nuclear program and in 2006 announced it had successfully carried out a test explosion. A year later the government of North Korea declared that it now possessed a nuclear weapon. The country has conducted two more test explosions since then, one in 2009 and one in early 2013.

Although at times North Korea appeared to be willingness to cooperate with the IAEA, it never allowed a full inspection of its suspect nuclear sites. The country agreed to cooperate with the IAEA numerous times, only to change course again. Since about 1993, the US has imposed sanctions against North Korea for its repeated failure to cooperate with the IAEA and for the country's support for terrorism.

The effect of the sanctions on North Korea was limited. Being a socialist country, North Korea follows a policy of self-reliance. History shows that countries that try to be self-reliant economically cannot become prosperous. The economy of North Korea is so underdeveloped that the country has experienced severe famines in its recent history. Up to now the country has received

significant amounts of food aid from Japan, the US, and UN. Even though North Korea is one of the poorest and least developed countries and the country was cut off even more from the rest of the world by the sanctions imposed on it, the country succeeded in acquiring nuclear weapons.

Hufbauer et al. divide the sanctions campaign on North Korea into two phases: 1993-1994 and 2002-2006 (Hufbauer et al., Case 93-1, 2008). Since the initial sanctions, which mostly consisted of positive sanctions such as food and energy aid, delayed the country's nuclear program for about a decade, the authors argue that the first phase can be regarded as a moderate success. The second phase, however, was an obvious failure in terms of policy outcome since the country succeeded in becoming nuclear.

It should be noted that the sanctions on North Korea had a limited impact because the trading relations between the country and its trading partners were not very large. Also, there was only limited international cooperation in sanctioning North Korea. The US attempts to impose stricter sanctions on North Korea were thwarted by opposition from China and Russia. Japan and South Korea, on the other hand, showed general support.

To summarize, sanctions have had various degrees of success in preventing countries from developing nuclear weapons. It is important to reiterate that in all of the sanctions episodes discussed in this chapter, economic sanctions cannot be regarded as the single force that contributed to their outcome. It is difficult to garner all relevant information about any single sanctions episode involving nuclear weapons because of the sensitive nature of the issue. In all of the cases political diplomacy and internal considerations of the target countries also played a role.

The analysis above shows that the record of economic sanction in stopping proliferation is at best patchy. In almost all of the cases in which sanctions were successful in stopping proliferation, becoming nuclear was not an overriding goal of the target countries. South Korea and Taiwan tried

to add a military flavor to their civilian nuclear programs but did not regard becoming nuclear as being of utmost importance. Libya's president Gaddafi was more concerned about gaining access to key oil technology. Finally, although Iraq's nuclear program was halted by the sanctions, the effect seems to have been only temporary.

In short, classifying sanctions episodes as successes or failures can be contested. Still, given what is known about particular cases we can carry out useful analyses. What has been the impact of increasingly stringent sanctions on Iran's nuclear policy and whether economic sanctions can be effective in the case of Iran are the subjects of the next chapter.

CHAPTER 5: ECONOMIC SANCTIONS AND IRAN'S NUCLEAR PROGRAM

The analysis in Chapter 3 of the international sanctions on Iran shows that although the sanctions have burdened the country's economy, they have not pushed it to the verge of collapse. The examination in Chapter 4 of historical episodes of sanctions against proliferation shows that sanctions as stand-alone policies rarely succeed in preventing countries from developing nuclear weapons. In all of the cases that can be classified as successes, developing nuclear weapons was not an overriding goal of the target countries. Instead, these countries briefly entertained the idea of acquiring nuclear capability, but were not determined to achieve this objective.

Based on the analysis in Chapters 3 and 4, I will argue whether economic sanctions can be effective in the case of Iran. To do this, I will establish criteria against which I will evaluate the effectiveness of using sanctions to prevent Iran from acquiring nuclear capability. Before presenting my findings about whether economic sanctions *can* be effective in changing Iran's behavior, I will discuss whether they *have* been effective so far.

5.1 Effectiveness of Sanctions on Iran: Track Record

As the Middle East specialist Kenneth Katzman (2012) put it, "Assessing the effectiveness of U.S. and international sanctions depends upon which goals are being examined" (p. 41). In this section I will discuss the effectiveness of the economic sanctions on Iran against three criteria: (1) the success of sanctions in stopping Iran's nuclear program, (2) the success of sanctions in delaying Iran's nuclear program, and (3) the success of sanctions in inflicting costs on the Iranian economy. Afterwards, in the next section, I will discuss the future prospects of using economic sanctions to prevent Iran from becoming a nuclear power.

5.1.1 Stopping Iran’s nuclear program

The overriding purpose of the economic sanctions against Iran has been forcing the Government of Iran to cooperate with the IAEA and the UN Security Council and “verifiably limit its nuclear development to purely peaceful purposes” (Katzman, 2013, p. 46). When measured against this criterion, it is clear that the international economic sanctions against Iran have not been effective so far, as Iran has not abandoned its nuclear program and has not complied with the UNSC resolutions.

5.1.2 Delaying Iran’s nuclear program

When measured against the criterion of delaying Iran’s nuclear program, the international sanctions have been fairly successful. The sanctions are believed to have increased the costs of the Iranian nuclear program. The Iranian program has also been slowed down by the sanctions restricting Iran’s access to key technology and equipment needed for enriching uranium. However, part of this slowdown can be attributed to under-the-table tactics such as attacking the computers of nuclear facilities in Iran with malicious software (Hufbauer, et al., 2012).

Even though the sanctions have delayed the Iranian program, the country is determined to continue its nuclear and missile programs. Recent IAEA reports state that Iran has been expanding its nuclear program and continues to enrich uranium to high levels (Director General of the Board of Governors of the IAEA, 2013). In February 2013, it was reported that Iran was significantly increasing the number of its centrifuges.

5.1.3 Hurting the Iranian economy

When measured against the subordinate goal of hurting the Iranian economy, the international sanctions have been somewhat successful. Even if sanctions will not be successful in preventing Iran from developing nuclear weapons, they will have had some success in punishing the

country for its failure to comply with its international nuclear obligations. As the analysis in Chapter 3 shows, the sanctions have exacerbated Iran's numerous economic problems and have created additional difficulties. However, the contribution of the sanctions to Iran's economic woes has been only partial and should not be overestimated. Moreover, since the sanctions have dragged on for a very long time, Iran has had ample time to adjust.

Iran has been trying to find ways to circumscribe the international sanctions against its energy sector. Iran and its partners have come up with alternative ways of exporting its oil ("Oil sanctions on Iran," 2012). Major buyers of Iranian oil have resorted to insuring the cargo themselves. Initially the National Iranian Oil Company even tried to disguise its tankers and hide their origin, but the US identified a large group of vessels that belong to Iran and enacted sanctions against companies that help Iran hide the origin of Iranian tankers. Iran and its buyers are also increasingly using barter arrangements in order to mitigate the effect of financial sanctions (Katzman, 2013).

At this point it is also important to note that economic sanctions impose costs not only on the target country, but also on the sender countries. For a start, sanctions have an opportunity cost: the sanctioning countries have to give up profitable trade relations with the target. Also, sanctions force firms in the sender countries to seek alternative sources of supply if the target country is a major supplier of important goods. Finally, an active sender might incur substantial costs trying to get the support of other important countries to sanction the target. In the case of Iran, the US has had to exert significant efforts to lead the international sanctions campaign against the Islamic Republic.

It is generally very difficult to numerically estimate the costs of sanctions on the sanctioning countries. It would be very challenging to calculate the economic costs of the sanctions on the US

and other sending countries (The Iran Project, 2012). Still, Hufbauer et al. have offered a rough, judgmental estimate of the economic and political costs that have been incurred by the sanctioning countries in the case of Iran. According to them, on a judgmental index from 1 (net gain to sender) to 4 (major loss to sender), the Iranian case gets a score of 3. In other words, the sanctioning party has incurred a “modest loss” both in the case of US sanctions in the period from 1980 until 2005 and the in the case of US, EU, and UN sanctions since 2006 (Hufbauer, et al., 2012, pp. 106-107). Thus, while the sender countries have had to look for alternative sources of oil and have foregone many lucrative business opportunities with Iran, they have not incurred major costs. This would change somewhat if world oil prices were to suddenly surge.

5.2 Effectiveness of Sanctions on Iran: Future Prospects

My analysis so far indicates that the economic sanctions on Iran have not accomplished their main goal, namely, forcing Iran to scrap its nuclear weapons program. Currently there is heated debate about whether sanctions can be effective in coercing Iran to stop its nuclear program. Relying on the analysis of Chapters 3 and 4, I will discuss the potential effectiveness economic sanctions on Iran.

The prospects for using economic sanctions to coerce Iran to cooperate with the international community over its nuclear program depend on a variety of factors, such as the (1) type and extent of the sanctions used, (2) the costs inflicted by the sanctions on the Iranian economy, (3) international cooperation while imposing the sanctions, (4) Iran’s ability to weather the hardships created by the sanctions, (5) the costs of compliance for Iran, (6) the effect of sanctions on important interest groups within Iran, and (7) the length of the sanctions regime. Below I will discuss the future prospects of using economic sanctions against Iran in light of these criteria.

5.2.1 Type and extent of sanctions

Iran has been subjected to all three broad types of sanctions, namely, import, export, and financial sanctions. However, not all countries have shown full cooperation to implement these sanctions. China, India, and Russia have shown only a modest support for sanctioning Iran. Even though most countries have reduced their imports of Iranian oil, it is unlikely that there will be a universal embargo on Iranian oil. Iran will find alternative markets for its exports relatively easily. This means the impact of sanctions on Iran will not be disastrous for its economy.

5.2.2 Cost of sanctions on Iran's economy

As was discussed in Chapter 3, the economic sanctions against Iran have strained the Iranian economy. The tightening of international sanctions in 2012 has put a pronounced economic pressure on Iran. However, the economy of Iran has not been driven to the verge of collapse. As the current sanctions regime drags on, Iran will adapt to mitigate the impact of the sanctions. There are already signs that the Iranian economy has been adjusting to the sanctions:

Iran has found ways to mitigate the economic and political effects of sanctions. Government-linked entities are creating front companies and making increased use of barter trade. Iranian traders are using informal banking exchange mechanisms and, benefitting from the fall in the value of Iran's currency, sharply increasing non-oil exports such as agricultural goods, minerals, and industrial goods. Affluent Iranians are investing in hard assets such as real estate (Katzman, 2013).

5.2.3 International cooperation

The extent of international cooperation in sanctioning Iran has changed greatly over time. From the early 1980s until about 2005 when the US led the efforts to sanction Iran's nuclear program and its support for terrorism, there was little international cooperation with the US and economic sanctions had only a limited impact on the Iranian economy and consequently no impact

on Iran's policies. Since 2006, international cooperation in sanctioning Iran has substantially increased. The UN and EU have joined the US efforts to isolate the Iranian economy.

Even though currently there is significant international cooperation on sanctioning Iran, countries like China, India, and Russia have shown only lukewarm support and are growing increasingly skeptical about the efficacy of using sanctions. They have been reluctant to impose stringent sanctions against Iran. These countries are more concerned about security in the region and their own economic relations with Iran.

Most of the UN sanctions on Iran had to be watered down to get Russia and China's approval. Past experience shows that in any sanctions episode it is very difficult to achieve the full cooperation of all major trading partners of the target country (Kaempfer & Lowenberg, 1992). Iran is not going to be an exception. Since oil is a fungible commodity and is universally demanded, Iran will find alternative markets for its exports relatively easily and will remain well-financed. Moreover, countries like North Korea are going to remain a key ally of Iran. In April 2013, several news publications reported that Iran was planning on selling oil to North Korea. There are also reports that North Korea might be cooperating with Iran on nuclear issues (Katzman, 2013).

5.2.4 Iran's ability to withstand sanctions

As was discussed in the previous chapter, historical analysis shows that economic sanctions cannot block a well-endowed country from acquiring nuclear weapons. In fact, if a country is firmly determined to become a nuclear power and has some financial resources, it will eventually succeed even if its economy is severely crippled. Pakistan successfully tested a nuclear weapon even though its economy was "distressed" (Hufbauer et al., 2007). Despite falling exports, rising inflation and unemployment, the economy of Iran is not falling apart. Moreover, the current economic woes of the country are largely a result of internal economic mismanagement. The new leadership that

comes to power in June will be forced to take measures to solve the country's economic problems. Iranians are becoming increasingly aware that the Iranian government is responsible for most of the country's economic problems (Plaut, 2013).

5.2.5 Cost of compliance for Iran

Iran is clearly worried about the reputational costs of complying with the demands of the sanctioning countries. Independent nations are usually concerned about their reputation in international relations (Drezner, 1999; Hufbauer et al., 2007). Iran views the costs of conceding to the demands of the US and Western countries as being too high. This is clear from Iranian leaders' rhetoric. Iranian leaders frequently refer to sanctioning Western countries as "evil" and "Iran's enemies." While giving a televised speech in early 2012, Iran's Supreme Leader Ayatollah Ali Khamenei stated "The Iranian nation believes in their rulers ... Sanctions imposed on Iran by our enemies will not have any impact on our nation" ("Khamenei," 2012). In May 2013, President Ahmadinejad said:

Today, they have imposed the heaviest sanctions against the Iranian nation to prevent its speedy move and they imagine that they can impede the Iranian nation('s progress) by such desperate moves. ... They should know that the Iranian nation will overcome all sanctions ... in the next 3 to 4 months and will foil the plots of ill-wishers ("Ahmadinejad," 2013).

The outcome of the upcoming presidential elections might change Iran's stance towards the West. If a reformist candidate wins the elections, he might take a more cooperative approach in talks on Iran's nuclear program and care less about the costs of giving in to pressure. If a conservative hardliner like Ahmadinejad comes to power, Iran is likely to continue to have a hostile attitude towards Western countries and the current stalemate over the country's nuclear program could last much longer.

5.2.6 Impact of sanctions on interest groups in Iran

As discussed in Chapter 1, in addition to creating economic hardships, sanctions can also lead to policy change through influencing interest groups in the target country. Since Iran has an authoritarian regime where there are no interests groups that could potentially change the regime, the public choice theory probably does not apply to Iran. However, it is important to discuss Iranian public opinion about the country's nuclear program.

According to a recent Gallup poll which interviewed 1,000 Iranians, the majority of Iranians support the country's nuclear program (Younis, 2013). When asked "Given the scale of the sanctions against Iran, do you think Iran should continue to develop its nuclear power capabilities, or not?" 63 percent of the respondents said 'yes' and only 17 percent said 'no'; 19 percent of the respondents refused to answer or said they did not know whether Iran should continue its nuclear program or not.

According to the same poll, the majority of Iranians believe that the sanctions have hurt the country's economy: 56 percent of the respondents said the sanctions had hurt Iranians' livelihoods a great deal. Another 29 percent said Iranian's livelihoods had been hurt somewhat by the sanctions. In short, despite their negative impact on the Iranian economy, the international sanctions have not undermined public support for Iran's nuclear program. On the contrary, the sanctions seem to have increased Iranian nationalism.

5.2.7 Length of sanctions

The duration of sanctions also influences the outcome of a sanctions campaign. Since Iran has been subjected to sanctions for a very long time, the country has had enough time to structurally adjust to mitigate the effects of the sanctions. According to Hufbauer et al., sanctions usually have a higher chance of success if they are imposed at full force instead of incrementally (2007). Thus, it

would have been much more effective if sanctions on Iran had been imposed “with maximum impact” (p. 168). It is true, however, that it takes much time and effort to generate multilateral cooperation on sanctioning a particular country. Sanctions against Iran have evolved slowly because initially there was little international cooperation. Therefore, sanctions against Iran are likely to remain incremental, providing Iran with sufficient time to adjust structurally.

The analysis above shows that the odds that the international sanctions on Iran will be effective are not great. The country is determined to become a nuclear power and views the cost of complying with the requirements of the sanctioning countries as too high. In the next, concluding part, I will offer policy recommendations on how the effectiveness of the sanctions on Iran can be potentially enhanced.

CONCLUSIONS AND RECOMMENDATIONS

The impact of international sanctions on Iran's economy and whether economic sanctions can stop Iran's suspected nuclear program are currently the subject of vigorous discussion among economists and policymakers alike. As sanctions against Iran have intensified, so has the debate over the effectiveness of economic sanctions as stand-alone policies in halting Iran's nuclear ambitions. While some argue that sanctions on Iran have made good headway, others claim that they have been futile.

The analyses in the previous chapters shows that the US and international sanctions have had no success in achieving their core goal, namely, stopping Iran's nuclear program. So far, the Government of Iran has shown no willingness to comply with demands of the IAEA and the UN Security Council. Iran's Supreme Leader Ayatollah Ali Khamenei and President Mahmoud Ahmadinejad have disregarded the sanctions and have claimed they will have no effect on the country's nuclear enrichment program.

However, the sanctions have been fairly successful in delaying Iran's nuclear program. Still, even this outcome cannot be attributed to the sanctions alone. Covert tactics, such as attacking computers used in Iran's nuclear program, have also played a role. Moreover, recent IAEA reports show that the country is making progress in its enrichment activities.

Finally, in achieving the subordinate goal of inflicting costs on the Iranian economy, the sanctions have had only a limited success. The sanctions have not devastated the Iranian economy as many expected. Rather, they have exacerbated the country's economic problems. The main culprit in Iran's economic problems has been the widespread economic inefficiencies within the country.

Below I will offer three policy recommendations on how to make the sanctions on Iran more effective. Since in my work I have focused only on the use of economic sanctions, I will not discuss complementary tools such as diplomacy, propaganda, and the threat of military action that could be used to induce cooperation from Iran over its nuclear program. These recommendations refer only to the case of Iran and may not necessarily apply to other cases.

6.1 Stay on the Same Page

As noted throughout, the impact of the sanctions on Iran has been undermined by the lackluster support shown for them by important trading partners of Iran. Most of the UNSC resolutions have had to be watered down to get the approval of China and Russia. Since the US has been leading the sanctions campaign against Iran, US government officials should resolve differences with China, India, and Russia in order to elicit more cooperation from these countries on imposing stricter sanctions.

In fact, there are serious concerns that “China may be refusing or failing to prevent Iran from acquiring weapons and WMD technology” (Katzman, 2013, p. 40). Such non-compliance seriously undermines the effectiveness of the sanctions campaign against Iran and thus should be stopped without delay. Generally speaking, as the sanctions regime on Iran drags on, fault lines are appearing in the international efforts. To prevent this from further undermining the sanctions, the sanctioning countries should resolve their differences and make a coordinated effort to sanction Iran.

Many NGOs are reporting that currently there is a serious shortage of medicines in Iran because of the sanctions. This might erode public support for sanctioning Iran. To reduce the humanitarian impact of the sanctions and keep public support for sanctions from waning, the sanctioning countries should take measures to make it possible to ship essential medicines to Iran.

An important step toward this goal would be to make paying for such shipments easier, since reportedly the shortages are largely caused by difficulties in financing (Katzman, 2013).

6.2 Offer Not Only Sticks, but Also Carrots

Economic sanctions are not always negative. As discussed in Chapter 1, they can also be positive measures, such as giving economic aid to the target country. As discussed in the previous chapter, Iran views the costs of complying with the demands of the sanctioning countries as being too high. To reduce this cost in the minds of Iranian leaders, positive sanctions could be added to the negative sanctions that have been imposed so far. Hufbauer et al. wrote in 2007:

But in cases such as Iran, involving national security goals, sanctions seldom work as a stand-alone instrument. US policymakers must also be prepared to negotiate and to offer positive incentives as a means of inducing cooperation from targets. Sticks are needed to ensure that carrots do not become simply rewards for bad behavior, but negotiations themselves are a process, not a carrot (p. 169).

Since 2007, many more sanctions have been imposed against Iran and the costs of compliance for Iran have risen even more. Therefore, now there is an even stronger case for offering Iran carrots in exchange for more cooperation over its nuclear program. These carrots could take the form of giving Iran more economic aid, assisting the county develop its energy sector, and helping the country with its civilian nuclear programs.

6.3 Close Loopholes

As discussed in Chapter 5, Iran has been finding ways to circumvent the impact of the sanctions. The country has been trying to establish front companies in Europe and other places to sell its oil (Katzman, 2013). To increase the efficacy of the sanctions, Iran should be banned from setting up such entities.

Currently Iran is estimated to have billions of dollars in bank accounts in Europe (Foster, 2013). A group of US senators have been trying to close this loophole by introducing legislation that would prohibit banks in Europe from allowing Iran to access foreign exchange reserves. If the legislation is passed, banks that refuse to comply will risk being denied access to US markets. However, as of May 2013, this legislation has not been passed. To increase the effectiveness of the sanctions on Iran, Iran's access to euro-dominated reserves should be blocked without delay.

Iran has also been using informal financial intermediaries to evade the sanctions that have been imposed against the country. For example, it has been reported that Iran is using *hawalas*—informal systems of transferring money popular in the Middle East and the Indian subcontinent—to evade the sanctions that ban financial transactions with Iran (Katzman, 2013). Since *hawalas* are informal systems, they make it possible for Iranian entities to conduct transactions with their trading partners without risking being sanctioned. The governments of the countries where *hawalas* are allowing Iran to conduct business should be encouraged to take measures to bring the informal systems under control and prevent their citizens from conducting business with Iranian entities.

Finally, enacting sanctions is one thing, but implementing them is another. Ambiguity about the implementation of the sanctions on Iran is preventing the sanctions from having a full effect. For example, even though the US has passed legislation sanctioning countries that import Iranian oil in large amounts, it has not specified just how much reduction is enough to be exempted from the sanctions. So far twenty countries have been exempted from US sanctions for reducing their oil imports from Iran. The US should not give exemptions easily and should establish clearly how much each importing country should reduce its imports to get exemptions. Even though US officials have stated that they have taken into consideration the suggestion to regard an 18 percent reduction as a significant reduction, it is unclear whether they have indeed used this standard. In general, to

increase their effectiveness, sanctions should be enacted aggressively against all violators. This will prevent ambiguity over the implementation of the sanctions from undermining their effect.

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