

Examining the implementation of UN sanctions on Iran

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1. INTRODUCTION

On 4 February 2006, the IAEA Board of Governors voted to refer allegations of Iranian non-compliance with the country's International Atomic Energy Agency (IAEA) safeguards agreement to the UN Security Council. Various rounds of diplomacy followed coordinated with the adoption of four rounds of iteratively tougher Security Council resolutions starting with 1737 in 2006 and ending with 1929 in 2010. These measures were 'targeted' in nature on certain specifically prohibited activities and designated individuals and entities.²²⁴ Certain states also adopted a range of unilateral sanctions that were complementary to the UNSC resolutions.²²⁵ By the time of the interim nuclear agreement (the Joint Plan of

224 Beginning in 2006, the UNSC adopted a total of seven resolutions, four of which imposed sanctions against persons or entities involved in Iran's nuclear proliferation activities. See Arms Control Association "UN Security Council resolutions on Iran: Fact Sheets and Briefs" www.armscontrol.org, October 2015. Available at: <http://www.armscontrol.org/factsheets/Security-Council-Resolutions-on-Iran> (Accessed 18 Feb 2016).

225 US and European Union's sanctions cover Iran's trade and financial activities and human rights abuses, apart from its weapons development-related programmes. See US Department of Treasury "Iran Sanctions" www.treasury.org, February 2016. Available at <https://www.treasury.gov/resource-center/sanctions/Programs/Pages/iran.aspx> and European External Action Service "European Union: Restrictive Measures (sanctions) in force January 2016. Available at http://eeas.europa.eu/cfsp/sanctions/docs/measures_en.pdf (Accessed 18 Feb 2016).

Action) in November 2013, Iran was subject to an intense, complex and multi-layered sanctions framework that affected nearly every aspect of the country's economy, government and life of its citizens.

Of particular note, however, is the targeted nature and scope of the UN sanctions resolutions. Unlike sanctions on Iraq in the 1990s, the purpose of UN sanctions on Iran was not to cripple the country's economy through the adoption of a wide-ranging embargo. Instead, the UN resolutions contained limited measures that related to constraining Iran's nuclear, missile and military programmes. The resolutions also included designations, i.e. lists of individuals and entities, connected with prohibited activities, and imposed restrictions on the movement of designated individuals in the Iranian regime as well as requirements to freeze assets of designated individuals and entities. The objective of the sanctions was primarily to constrain Iran's actions until a diplomatic resolution to the case could be found, and to pressure Iran diplomatically into reaching a negotiated solution.

It is against these more modest objectives that this paper, in the first instance, examines UN sanctions on Iran. This is achieved by reviewing compliance with the sanctions resolutions primarily by examining information collected by the sanctions committee set up by the Security Council to oversee implementation of the sanctions as well as its related 'panel of experts'. Consideration is also given to the functioning of these bodies, particularly in relation to their ability to collect and report on information related to potential non-compliance. A related factor is that of willingness and capacity to implement the sanctions in countries other than Iran and the ability of the UN apparatus to provide support to states to this end.

While it is appropriate in the first instance to restrict an evaluation of the effectiveness of the UN sanctions that were adopted in relation to Iran, it is also necessary to give consideration to the question of whether the nature and scope of the sanctions architecture that was adopted was in fact suited to the objectives set for it.

We have examined this question by considering how effective the measures were in constraining Iran's nuclear, missile, and military programmes.

While the question of how non-UN sanctions affected the Iranian calculus and contributed (or otherwise) to the agreement of the Joint Comprehensive Plan of Action (JCPOA) in July 2015 is interesting, it is largely beyond the scope of this chapter, which focuses instead on UN-related measures. However, this chapter would not be complete without an examination of how UN sanctions measures enabled and supported – or otherwise – unilateral measures.

Gaining insight into these matters at this point is vital. While the UN sanctions measures were suspended on 'implementation day' of the Iran nuclear agreement (16 January 2016), the JCPOA and UNSCR 2231 contains measures intended to prevent Iranian illicit trade over the next decade.²²⁶ Additionally, Resolution 2231 contains a so-called 'snapback mechanism' which could result in the UN sanctions returning.²²⁷ As such, it is vital to understand if and how the sanctions worked in order to inform implementation of measures to prevent Iranian non-compliance in the future.

In examining these matters, this chapter draws primarily upon three sets of information. The first is published information from the 1737 and its 'Panel of Experts'. The second is media reporting concerning the committee and panel's work. The third is information compiled by Project Alpha at King's College London in relation to the implementation of UN sanctions on Iran. Evidently, there

226 Resolution 2231, adopted by the UNSC in July 2015, endorsed the JCPOA. It was implemented in January 2016 after confirmation from the IAEA that Iran had satisfied the requirements stipulated in the action plan. Provided all provisions are met, Termination is scheduled ten years after the adoption date. See UNSC "Resolution 2231 (2015), www.un.org/en/sc/2231/ (Accessed 18 Feb 2016).

227 *Ibid.* - A JCPOA member State can raise non-performance of JCPOA commitments, whereby the SC shall resolve whether to continue in effect of the termination of previous resolutions - 1696, 1737, 1747, 1803, 1835, 1929 and 2224. If decision is not made 30 days after the member State's notification, effectivity of previous resolutions shall be restored.

is some overlap between these information sources. The personal experiences of the authors also provide contextual reference for this analysis.

This chapter proceeds as follows. First, a brief chronology of the Iran file is set out highlighting, in particular, the adoption of UN resolutions. Second, an overview of the requirements of the resolutions is laid out. The measures are categorised as prohibitions on transfers of nuclear and dual-use goods and technologies, asset freezes, travel bans [etc]. The implementation and monitoring mechanism established by the UN is also outlined. Next, the implementation of sanctions on Iran is examined. This is achieved by looking at statistics related to implementation reports submitted to the 1737 committee. The reporting to and reporting by the panel of experts and 1737 committee in relation to non-compliance is also scrutinised. The next section analyses the effect of the sanctions on Iran's prohibited programmes. This includes an examination of Iran's ability to import goods for the programme despite the sanctions and the advancement of the programmes over the sanctions period. Finally, consideration is given to how the UN measures related to the implementation of complementary unilateral measures. The chapter concludes that while there are grounds to believe that UN sanctions have slowed Iran's nuclear and missile developments, the measures did not prevent such advancements altogether. Such measures can, however, contribute to the monitoring of Iran's nuclear programme in the future.

2. IRAN AND SANCTIONS

The United Nations Security Council adopted a number of sanctions resolutions against Iran. These measures were adopted primarily in order to induce Iran to return to the negotiating table in order to reach a conclusion over the future of its much-disputed nuclear programme.

2.1. Brief Chronological narrative

The sanctions period is a relatively short part of a much longer story concerning Iran's nuclear programme and its relations with western countries. Prior to the Islamic Republic in the 1970s, Shah-led Iran had sought to develop a substantial nuclear infrastructure funded by the country's oil wealth and enabled by a close relationship with the United States and other western powers. In 1967, Iran acquired the Tehran Research Reactor from the United States along with a small quantity of highly enriched uranium fuel that has remained in Iran to this day.²²⁸ It also signed contracts with German and Russian companies to acquire the Bushehr Nuclear Power Plant (BNPP) and was negotiating over the supply of a commercial-scale reprocessing capability.²²⁹ In 1970, Shah-era Iran had signed the NPT and undertaken other non-proliferation commitments.

After the Islamic revolution, the country's nuclear programme stalled, with the Islamic Republic dismissing nuclear power as 'un-Islamic'. Ironically, there are signs that Iran's inability to cancel Shah-era contracts prevented the whole-scale abandonment of nuclear activity in Iran. Following the Iran-Iraq war in 1980 - 1988, Iran is believed to have grown interested in developing nuclear weapons technology, mainly to achieve self-reliance should a decision be taken to seek nuclear weapons themselves.²³⁰ The then President of Iran, Ali Akbar Hashemi Rafshanjani, has recently been quoted as saying, for example, that:

228 Nuclear Threat Initiative "Tehran Research reactor (TRR)", www.nti.org, 23 Aug 2013. Available at <http://www.nti.org/facilities/182/> (Accessed 18 Feb 2016).

229 The initial contract was signed in 1976 with Siemens KWU but the plant was damaged by Iraqi airstrikes between 1984-88. A new agreement was signed with the Russian government in 1995 that made use of the original equipment and structures. See World Nuclear Association "Nuclear Power in Iran" www.world-nuclear.org Jan 2016. Available at <http://www.world-nuclear.org/information-library/country-profiles/countries-g-n/iran.aspx> (Accessed 18 Feb 2016).

230 Chubin, S. "The Politics of Iran's Nuclear program" *The Iran Primer*, United States Institute of Peace. Available at <http://iranprimer.usip.org/resource/politics-irans-nuclear-program> (Accessed 18 Feb 2016).

“As I have said, when we started the [nuclear] work, we were at war, and we wanted to have such an option for the day our enemies wanted to use nuclear weapons. This was [our] state of mind, but things never become serious.”²³¹

Iran sought support from international suppliers in taking forward its renewed interest in nuclear technology. It concluded contracts to complete the Bushehr 1 nuclear power plant.²³² It also signed an agreement with AQ Khan over supply of centrifuge technology and was alleged to have launched a programme with the specific purpose of designing nuclear weapons.²³³

Iran’s progress on the nuclear front appeared to be slow during the Iran-Iraq war and the period that followed. Nonetheless, concerns about Iran’s nuclear activities came to the fore in 2002, when the National Council for Resistance of Iran (an opposition group) revealed details of an underground uranium enrichment site (the Natanz Fuel Enrichment Plant).²³⁴ It was also around this time that full details of the AQ Khan proliferation network were becoming known to western intelligence agencies.

An initial round of diplomacy followed led by the E3 (France, Germany and the United Kingdom). In 2003, Iran agreed to suspend its nuclear activities and to voluntarily adhere to the Additional Protocol.²³⁵ This lasted only until 2006 when, after the election of President Mahmoud Ahmadinejad, Iran abandoned its commitment

231 As reported in the The Jerusalem Post, “Former Iran president indirectly admits country sought nuclear weapons”, Available online at: <http://www.jpost.com/Middle-East/Iran/Former-Iran-president-indirectly-admits-country-sought-nuclear-weapons-430302> (Accessed 22 March 2016).

232 World Nuclear Association “Nuclear Power in Iran” www.world-nuclear.org Jan 2016. Available at <http://www.world-nuclear.org/information-library/country-profiles/countries-g-n/iran.aspx> (Accessed 18 Feb 2016).

233 Laufer, M. “A.Q. Khan Nuclear Chronology” Sep 2005, Carnegie Endowment for International Peace. Available at <http://carnegieendowment.org/2005/09/07/a.-q.-khan-nuclear-chronology> (Accessed on 18 Feb 2016).

234 The Institute for Science and International Security “Nuclear Sites”. www.isisnucleariran.org, Available at <http://www.isisnucleariran.org/sites/detail/natanz/> (Accessed on 18 Feb 2016).

235 The Center for Arms Control and Non-Proliferation “Factsheet: Iran and the Additional Protocol” Jul 2015, Available online at <http://armscontrolcenter.org/factsheet-iran-and-the-additional-protocol/> (Accessed on 18 Feb 2016).

to the agreement. It broke the IAEA seals that had temporarily ensured that nuclear equipment and materials could not be used and resumed its nuclear programme. It was this reduced cooperation and the outstanding questions about the past nature of Iran's nuclear programme that resulted in the IAEA's Board of Governors referring the case to the UN Security Council in 2006.

As noted above, the UN Security Council adopted a total of four sanctions resolutions following Iran's continued refusal to suspend proliferation-sensitive nuclear activities (now including heavy-water-related activities). These resolutions contained repeated and enhanced provisions requiring Iran to halt its proliferation-sensitive activities and demonstrate the peaceful nature of its nuclear programme. Iran did not do so and further revelations followed. These included the discovery of another secret enrichment site near Qom, which was announced to the world by the leaders of France, the United States, and the United Kingdom in 2009.²³⁶ This was followed by another SC resolution, 1929, which imposed further sanctions and created a panel of experts to monitor Iranian compliance.²³⁷

It is principally this sanctions landscape that is of interest in this paper. No further UN resolutions containing new sanctions measures were adopted following Resolution 1929 (2010). Although Resolution 2231(2015) includes restrictions on certain activities that were originally covered by sanctions, it is not itself a sanctions resolution. The resolution endorsed the JCPOA between the E3+3²³⁸ and Iran and paved the way for lifting of the four UN sanctions resolutions. It also created an architecture for managing the Iran nuclear file for the next decade.

236 Nikou, S. "Timeline of Iran's nuclear Activities" The Iran Primer, United States Institute of Peace. Available online at <http://iranprimer.usip.org/resource/timeline-irans-nuclear-activities> (Accessed on 18 Feb 2016).

237 Arms Control Association "UN Security Council resolutions on Iran: Fact Sheets and Briefs" www.armscontrol.org, October 2015. Available at: <http://www.armscontrol.org/factsheets/Security-Council-Resolutions-on-Iran> (Accessed 18 Feb 2016).

238 France, Germany, United Kingdom, United States, Russia, China.

It should be borne in mind that, although no further sanctions resolutions were adopted by the United Nations, various other measures were effected by other states over the decade prior to the passage of resolution. Perhaps most notable among these were the US unilateral sanctions that had a substantial effect on US and non-US individuals and entities and EU sanctions. Both expanded dramatically following adoption of Resolution 1929 (2010).

2.2. Overview of UN measures

It is the UN measures that are of principle interest to this paper. The UN adopted a range of measures that fall within the definition of ‘targeted’ sanctions. Details of the provisions of the four resolutions are described later (see next section: Examining Implementation of UN Security Council resolutions on Iran).

Targeted sanctions were developed as a tool towards the end of the Iraqi ‘sanctions decade’ of the 1990s.²³⁹ The process of developing targeted sanctions was led by states, such as Sweden, Norway and Switzerland, acting in concert with a number of non-governmental organisations which were concerned about the humanitarian impact of sanctions on Iraq. The objective in developing the targeted sanctions toolset was to identify measures that could constrain a state’s ability to pursue policies of concern while also sparing the target country’s population from the harm associated with a full economic embargo. The targeted sanctions toolset that was devised included measures such as designations, asset freezes, travel bans, and arms embargos – measures that were intended to affect decision makers and impact on involved in activities of concern but not on the population at large.

It is notable that the UN sanctions on Iran included a prohibition on the import of nuclear and missile-related goods and technology. Combating WMD proliferation by Iran was perhaps

239 See for example, “Summary of the interlaken process”, Watson Institute for International Studies Brown University. Available online at: http://www.watsoninstitute.org/tfs/CD/ISD_Summary_of_Interlaken_Process.pdf (accessed 27 March 2016).

not foremost in the minds of those who conceptualising the targeted sanctions toolset in the 1990s, and so no specific controls over such activities are included in the targeted sanctions approach. Nonetheless, conceptually at least, the restrictions on nuclear and missile-related goods invoked by the Security Council on Iran are consistent with targeted sanctions principles: the measures are intended to restrain the ability of states to pursue programmes of concern; they affect the state's actions rather than its populations; and their broader economic effect is limited.

Iran provides the first real-world case study in which WMD-related measures were adopted and then terminated by the Security Council since the UN moved towards the principle of targeted sanctions following the Iraqi sanctions episode of the 1990s. UN sanctions against North Korea are the only other example of targeted sanctions against a state-sponsored WMD programme, but these are still in effect and indeed have recently been strengthened under Resolution 2270 (2016). The UN did not adopt sanctions in the other recent major proliferation episode – the attempt of Syria to secretly construct a graphite-cooled reactor provided by North Korea, which was destroyed by Israel in 2007.²⁴⁰

3. EXAMINING IMPLEMENTATION OF UN SECURITY COUNCIL RESOLUTIONS ON IRAN

UN sanctions resolutions on Iran were preceded by Security Council Resolution 1696 (2006) adopted on 31 July 2006 under Article 41 of Chapter VII of the UN Charter (Chapter VII resolutions are binding on all UN Member States). This demanded that Iran suspend all enrichment and reprocessing activities, including research and development, and called upon Iran to take steps

240 Nuclear Threat Initiative “Al-Kibar” www.nti.org. 06 Dec 2013, Available online at <http://www.nti.org/facilities/461/> (Accessed on 18 Feb 2016).

required by the IAEA Board of Governors.²⁴¹ The Resolution set a deadline of 31 August for the IAEA DG to report that Iran had complied.

Iran did not comply and later that year the Security Council imposed the first of four Chapter VII sanctions resolutions (the fourth resolution was passed in 2010). It should be noted that all four sanctions resolutions contained wording which emphasised the importance of political and diplomatic efforts to find a negotiated solution leading to a long-term comprehensive agreement and international confidence in the exclusively peaceful nature of Iran's nuclear programme. UN sanctions were a means to this end. They were not an end in themselves.

The four resolutions included three main elements: measures binding on Iran, measures binding on UN member states, and a framework for management of these sanctions by the Security Council. These are explored in turn below.

The resolutions were intended progressively to increase pressure on Iran, partly through increasingly forceful language (for example, the Security Council "called upon" certain provisions in early resolutions but "decided" these provisions in later resolutions) and by increasing the range and scope of prohibited activity. But although early resolutions were passed unanimously the later ones were not, and despite Iran's continuing refusal to suspend proliferation-sensitive activities, the Security Council made no serious attempts to pass further sanctions resolutions after 2010. There was no possibility of the P5 reaching agreement on further measures against Iran. Unilateral sanctions became the main vehicles to encourage change of behaviour by Iran.

3.1. Measures binding on Iran

Under the first sanctions resolution, Resolution 1737 (2006) of 27 December 2006 (passed unanimously), the Security Council reaffirmed the requirements on Iran under Resolution 1696 (2006)

241 Under resolution GOV/2006/14.

but specified which of Iran's nuclear activities (characterized as "proliferation sensitive nuclear activities") should be suspended. They included all enrichment-related and reprocessing activities, including research and development, and also work on all heavy water-related projects, including the construction of a research reactor moderated by heavy water. The IAEA was to be provided access and cooperation to verify suspension as well as to verify Iran's compliance with the steps previously required by the IAEA Board of Governors. Iran was to verify the Additional Protocol. Iran was also prohibited from exporting items listed in the versions of the NSG Guidelines and of the MTCR Guidelines current at the time.

Following Iran's refusal to comply with Security Council demands, the second sanctions resolution, 1747 (2007) followed quickly, on 24 March 2007 (and was passed unanimously). This reaffirmed the requirements laid down on Iran by Resolution 1737 (2006). It also prohibited Iran from exporting, in any fashion, arms or related materials. The third resolution, 1803 (2008) of 3 March 2008 (passed with one abstention, Indonesia), followed Iranian continued refusal to suspend proliferation sensitive nuclear activities, and also lack of cooperation with IAEA as required under Iran's Safeguards Agreement (in particular Iran's interpretation of its obligations under Modified Code 3.1). This resolution reaffirmed Iran's obligations in the same terms as the previous two resolutions.

The fourth and final sanctions resolution, 1929 (2010) of 9 June 2010 (vote of 12 in favour to two against (Brazil, Turkey), with one abstention (Lebanon)), followed two more years of continuing refusal by Iran to comply with previous Security Council resolutions, by the discovery of an undeclared enrichment facility under construction at Qom, and by Iranian tests of ballistic missiles. In addition to the requirement on Iran to implement previous Security Council resolutions, Resolution 1929 (2010) focused on Iran's IAEA obligations but also specified a wide range of other requirements and prohibited activities, in unprecedented detail.

Iran was required to cooperate fully with the IAEA, in particular with regards to the investigation into the possible military

dimensions (PMD) of its nuclear programme.²⁴² Iran was obliged to comply fully with its IAEA Safeguards Agreement (in particular the Modified Code 3.1 and the Additional Protocol requirements).

Iran was to suspend all reprocessing, heavy water-related and enrichment-related activities. Iran was forbidden from beginning construction of new uranium-enrichment, reprocessing or heavy-water-related facilities and to cease any construction already taking place.

Iran was prohibited from involvement in any commercial activity abroad relating to production of uranium or of items on the current NSG Part 1 list, in particular uranium-enrichment and reprocessing activities and heavy-water activities.

Iran was also prohibited from involvement in any commercial activity abroad relating to technology related to ballistic missiles capable of delivering nuclear weapons. Furthermore, Iran was forbidden from undertaking any activities related to ballistic missiles capable of delivering nuclear weapons, including launches using ballistic missile technology.

These measures were reinforced by corresponding measures binding on other UN member states.

3.2. Measures binding on UN member states

The controls the Security Council required UN Member States to implement fell into the following categories: transfers of prohibited items (exports, transshipments etc); services related to such transfers (financial, brokering, etc); movements of individuals associated with prohibited activities; freezing of assets of individuals or entities involved in prohibited activities. As with the requirements specifically on Iran, each successive resolution increased the range and scope of requirements on UN member states as a whole.

Under the first sanctions resolution (1737 (2006)), States were required to prevent the transfer to Iran, by any means, of items, materials, equipment, goods and technology which could contrib-

242 And specifically with a further IAEA resolution, GOV/2009/82.

ute to Iran's prohibited activities. These were specifically defined as those included in the NSG Part 1 lists then current. Exceptions were specified in respect of items transferred in connection with Russia's development of the Bushehr nuclear reactor. The transfer bans also extended to items contained in the MTCR lists then current (with certain exceptions for UAVs, and other items if the Security Council or Committee so determined).

States were also required to prevent transfers under a series of so-called "catch-all" provisions based on the State's own determination of end-use. For example, items on the NSG Part 2 lists then current if the State determined that they would contribute to Iran's prohibited activities, and other items that would contribute to prohibited activities or to other topics of IAEA concern.

The transfer bans extended to technical assistance or training, financial assistance, brokering or other services. However, States were entitled to make use of limited exceptions to certain of the transfer bans if for example they could verify end-use or end-use location, and the Committee itself could determine that any particular transfer would not contribute to Iran's prohibited activities.

States were also required to notify the Committee in the event of entry into or transit through their territory of individuals designated by the Committee as involved in prohibited activities.

States were in addition required to freeze funds, other financial assets and economic resources owned or controlled by individuals or entities designated by the Security Council or Committee for involvement in prohibited activities, including individuals or entities acting on their behalf or at their direction, or entities owned or controlled by them. The resolution included grounds for exceptions to freezes, for example in connection with contracts with designated individuals or entities which pre-dated the resolution.

Finally, States were asked to prevent any specialised teaching or training of Iranians that could contribute to Iran's prohibited activities.

The main new measure introduced under Resolution 1747 (2007) was a request for States to exercise restraint in supplying

certain categories of conventional arms and related material to Iran, including related technical assistance, financing or other services. The resolution included a further list of designated individuals and entities subject to asset freezes, and States were requested to exercise restraint in regarding travel in their territories of such individuals.

Travel provisions were further strengthened under Resolution 1803 (2008): lists of individuals were added who were prohibited from travel, and further designations for asset freezes. All items contained in the NSG Part 2 list were banned for transfer to Iran (except for those for light water reactors, or for technical cooperation projects with the IAEA), and UAV-connected items. New financial measures were imposed, including a call for vigilance over support for trade with Iran, and over the activities of financial institutions dealing with Iranian banks. An important new development was a request for States to carry out inspections of cargo carried by Iran Air Cargo or IRISL if States had “reasonable grounds to believe” that prohibited goods were involved.

All these measures were strengthened and expanded under Resolution 1929 (2010), the fourth and final UN sanctions resolution. States, previously requested to exercise restraint over transferring certain categories of arms and related materials, were now prohibited from doing so. Travel bans were imposed on all listed individuals. Asset freezes were extended to further lists of individuals and entities. References to NSG and MTCR lists were updated to reflect then current versions. States were requested to carry out inspections of any cargo to or from Iran if they had “reasonable grounds to believe” that prohibited goods were involved, and to cooperate with inspections on the high seas. States were authorised to seize and dispose of any prohibited items found during these seizures or inspections. Bunkering services were prohibited to Iranian vessels if States had “reasonable grounds to believe” that prohibited goods were being carried.

States were called upon to prevent provision of financial services (including insurance) if States had “reasonable grounds to believe” that prohibited activities were involved. States had to

ensure that their individuals or entities exercise vigilance when doing business with Iranian individuals or entities if States have “reasonable grounds to believe” that such business could contribute to prohibited activities. States were called upon to prevent the opening of new branches or subsidiaries by banks in their territories in Iran, or vice-versa, if they had “reasonable grounds to believe” that such business could contribute to prohibited activities.

In addition, States were requested or required to provide a variety of different reports to the Committee on implementation of certain of the provisions of these four resolutions. These provisions related to asset freeze requirements (paragraphs 13-15 of Resolution 1737 (2006)), travel by designated individuals, exceptions to bans on transfers of prohibited items, and cargoes inspected by States on the basis of “information that provided reasonable grounds to believe” that prohibited items were involved (within five working days), together with a subsequent report with details, including of disposal of the cargo. In addition, States were also required, for each resolution, to submit a report on implementation within 60 days of the resolution.

Although the Committee received a number of reports under these various provisions, insufficient information is in the public domain to be able to analyse them in any detail, with the exception of implementation reports and to a lesser extent inspection reports. Summaries of inspection reports were included in a number of final reports of the Panel of Experts published by the Security Council.

Regarding implementation reports, the Panel found that only a small percentage of states reported as required within 60 days, and in their June 2011 report, the Panel recorded that 67% of UN Member States had yet to submit an implementation report against any of the resolutions. In June 2013 the Panel found that over half the UN States had yet to submit an implementation report against any of the resolutions for, and this remained true in June 2014 and June 2015.

It would seem reasonably straightforward for States to submit implementation reports, and there are likely several reasons

why so many did not do so. These included 'UN reporting fatigue' among states which may have believed that amongst their various UN obligations, sanctions on Iran were not a high priority, or they lacked political will to implement certain UN resolutions effectively. It is also possible that some states simply did not understand their obligations in relation to UN resolutions concerning Iran, or even if they did, they did not have the legislation or governmental procedures in place to implement them effectively.

By contrast, reports from States of inspections of cargoes show a different trend. From a low number recorded in the Panel's first final report (June 2011), the number of cases under investigation peaked in 2014 (30 cases recorded in the Panel's 2014 report). Subsequent numbers fell dramatically, perhaps because States were reluctant to report while negotiations with Iran were taking place under the Joint Plan of Action or perhaps because fewer cargoes were being inspected.²⁴³

Judging by 90-day reports of the 1737 Committee, and the final reports of the Panel on Iran, most states seem to have been broadly compliant with the requirements of the resolutions. It is possible that Democratic People's Republic of Korea (DPRK) worked with Iran to circumvent sanctions related to ballistic missiles, but no evidence was presented either to Committee or to the Panel of specific technical cooperation.²⁴⁴

Furthermore, no evidence was presented that any State had wilfully violated the resolutions, with one exception. That exception related to Iranian Republican Guard Corps. (IRGC) General

243 See for example "Implementation of the Joint Plan of Action from November 24, 2013 in Geneva Between the P5+1 and The Islamic Republic of Iran and Provision of Limited, Temporary, and Targeted Sanctions Relief" US Treasury, 20 January 2014 (<http://www.state.gov/r/pa/prs/ps/2014/01/220054.htm>).

244 Panel 2013 report.

Qasem Soleimani, who despite being designated under Resolution 1747 (2007), and thus under a travel ban, visited Syria on several occasions and Moscow at least once according to media reports.²⁴⁵

Most importantly, because preventing transfers to Iran of prohibited items, or items intended for prohibited activities, was one of the most important objectives of UN sanctions, no reports were received of state-authorized transfers of nuclear, missile or arms-related material and related services. Furthermore, a dataset maintained by Project Alpha of all publicly known transfers of items relevant for Iran's nuclear or missile programmes shows that no transfers are known to have been expressly authorised by exporting governments for nuclear and missile end uses in Iran with the exception of purported missile cooperation between Iran and North Korea (which is also under UN sanctions).

This said, there were clear differences of opinion between different States over interpretation of certain sanctions provisions. For example, export control authorities interpreted "catch-all" provisions in different ways. The requirement to take action if States possessed "information that provides reasonable grounds to believe" was open to different interpretations of "possessed", "reasonable grounds" and "believe". As a consequence, some States would prevent export of, or interdict, cargoes containing dual-use items and others would not. Iran was aware of such inconsistencies and almost certainly planned procurement of UN-prohibited items accordingly.

While there are no signs that states were complicit in prohibited transfers to Iran the Project Alpha dataset shows that non-state

245 Paragraph 95 of Report of June 2014 by UN Panel on Iran (S/2014/394), Paragraph 67 of Report of June 2014 by UN Panel on Iran (S/2014/401), "How Iranian general plotted out Syrian assault in Moscow", Laila Bassam and Tom Perry, Reuters 6 October 2015; Russia: "Top Iranian Commander Did Not Visit Moscow" 'Last Week' Russia New.Net, 15 August 2015.

actors from certain states nonetheless were frequently involved in prohibited transfers such prohibited transfers. Iran's programme had a clear preference for EU and US origin items.²⁴⁶

Other states feature prominently on the dataset as diversion or trans-shipment points. China, for example, has been heavily criticised for taking a lax approach to enforcement of sanctions on North Korea and Iran, in particular interpreting "catch-all provisions" very narrowly, although there are signs that China has boosted efforts in recent years.²⁴⁷ Other notable transshipment States included Singapore and UAE – both states that have taken substantial steps in recent years to improve the implementation of non-proliferation controls with the adoption of comprehensive strategic trade control legislation.

3.3. Non-state actors

One reason that implementation of UN sanctions was difficult for states was the involvement of non-state actors in prohibited activities. Effective implementation of UN sanctions required State authorities to inform non-State actors of their obligations under the resolutions and to be in a position to monitor their performance and if necessary enforce sanctions implementation. Not all States are in a position to do this. It is thus worth examining the role of non-state actors in implementing UN resolutions on Iran in more detail.

Generally, UN resolutions are binding on states rather than on non-state actors. As a matter of principle and sovereignty, it is for states to adopt and enforce any laws that are necessary to ensure that the actions of non-state actors are consistent with the obligations of states. This is perhaps demonstrated best in Security Council Resolution 1540, which is not a sanctions resolution and was

246 Unpublished Dataset assembled by Project Alpha related to nuclear and missile-related equipment, goods and materials to Iran. Project Alpha, King's College London.

247 Stewart, I, "China and Non-Proliferation: Progress at Last?", *The Diplomat*, March 25, 2015. Available online at: <http://thediplomat.com/2015/03/china-and-non-proliferation-progress-at-last/> (Accessed 27 March 2016).

not specifically aimed at any one state WMD programme. In that resolution, states are expressly required to take a range of actions in order to prevent non-state actor involvement in proliferation, including implementation and enforcement of export controls and border controls.

Practically every known case of Iranian illicit procurement has involved at least one (and usually several) non-state actors that have been either complicit or partly complicit in supplying goods to Iran. A key challenge in exploring such cases is the complex nature of supply chains. While there is not enough information available on how Iranian procurement agents operate to draw definitive conclusions, analysis of certain cases indicates common characteristics which might suggest a common approach. It appears from these cases that Iranian procurement agents establish long term relationships with complicit or semi-complicit businessmen outside the territory. These semi-complicit businessmen in turn facilitate the procurement of the necessary goods. Analysis of the Project Alpha dataset suggests that these facilitators tend not to procure the goods directly from manufacturers, but instead either through third companies (which are sometimes front companies) or through non-standard sales channels (i.e. resold stock, internet trading platforms etc).

3.4. The Cheng Network

A particularly illuminating case is that of the Cheng network.²⁴⁸ Cheng was a Chinese national that, over a number of years, worked to facilitate the sale of materials and equipment to Iran. Cheng's Iranian contact was Seyed Abolfazl Shahab Jamili who is associated with two Iranian companies, Nicaro Co. Ltd., and Eyvaz Technic Manufacturing Company. It is known that Jamili was procuring goods on behalf of Kalaye Electric Company, which had responsibilities for the development of Iran's centrifuge enrichment capability.

248 For a detailed overview of the Cheng Case, see: Stewart, I., "The Chinese Smuggler and the Iran Deal", *The Diplomat*. Available online at: <http://thediplomat.com/2016/03/the-chinese-smuggler-and-the-iran-deal/> (Accessed 27 March 2016).

In 2009, Jamili asked Cheng to acquire capacitance manometers – a type of pressure transducer that is used to measure vacuum pressures in centrifuge cascades. Such pressure transducers are manufactured by only a handful of companies worldwide and are controlled by members of the Nuclear Suppliers Group. As the technical specifications appear to meet the thresholds set out in Nuclear Suppliers Group Part 2 (dual-use) list in use at the time – incorporated into UN sanctions resolutions on Iran – it is almost certain that this supply was in breach of UN sanctions on Iran.

Cheng approached MKS Shanghai Ltd, a wholly owned subsidiary of the manufacturer, MKS Instruments Ltd, which is based in Andover, Massachusetts. Staff at MKS Shanghai Ltd advised Cheng that they could not sell the goods direct and referred Cheng instead onto another businessman, Wang Ping. Ping, Cheng and another Chinese National, Qiang Hu (aka Jonathan Hu) then conspired to have the US-origin pressure transducers diverted to Iran. In some cases, Cheng directed the shipments via third countries, including Singapore and Hong Kong. Cheng admitted removing the packaging labels from some of the boxes to reduce the likelihood that the goods would be stopped on route to Iran.

Through this scheme, more than 1,000 pressure transducers were diverted to Iran. As set out below, Iran is not known to have a domestic manufacturing capability for these items. 1,000 units would also likely be sufficient to operate Iran's entire enrichment capability for a number of years. The price Jamili paid to Cheng and the base price of the pressure transducers are known. It has therefore been possible to calculate the approximate financial incentive for the conspirators in this case, which equated to around a 100% markup on the items that retail for around 1,000 US dollars each. This substantial markup likely explains why individuals such as Hu and Cheng were willing to supply the goods to Iran despite restrictions.

3.5. UN management of Iran sanctions

UN sanctions resolutions are normally managed on a day-to-day basis by Committees, subsidiary bodies of the Security Council.

Iran sanctions were managed by the Committee established pursuant to Resolution 1737 (2006).²⁴⁹ This committee was tasked with seeking information from States and the IAEA regarding implementation of the resolution, to examine and take action on alleged violations, to decide on requests for exemptions; to add as necessary to lists of prohibited items and designations, to set out guidelines on implementation and to report every 90 days to the Security Council. The last point is particularly important: the 90-day reports were published on the UN website and, although agreed by consensus by the Committee (and thus largely expunged of issues politically sensitive to any one member), they provided insights into the workings of the Committee and reports submitted by States.

Many UN sanctions committees are supported by panels of experts, and the Iran Panel was created with a renewable yearly mandate under Resolution 1929 (2010).²⁵⁰ The Panel's terms of reference included assisting the Committee, gathering, examining and analysing information regarding implementation of sanctions, making recommendations to improve implementation, and submitting interim and final reports. The first of the Panel's final reports (of June 2011) was not published, following disagreement on the point within the Security Council. Subsequent final reports, the last dated June 2015, can be found on the UN website.²⁵¹

The Panel confined itself to technical aspects of sanctions provisions in carrying out its mandate but decisions made by the committee generally reflected positions of the Security Council. It operated by consensus which meant in practice that it often failed to take action, for example by designating additional individuals or

249 Para 18 of Resolution 1737 (2006).

250 Formal title: Panel of Experts established pursuant to Resolution 1929 (2010).

251 Following Implementation Day of the JCPOA (16 January 2016) the great majority of material relating to Iran sanctions and the work of the 1737 Committee has been removed from the UN website. However 90-day reports can be found at: <http://www.un.org/en/sc/meetings/> (and can also be found on non-UN websites such as Iran Watch). Reports of the UN Panel are most easily found by searching on their UN document numbers (S/2012/395, S/2013/331, S/2014/394 and S/2015/401).

entities proposed by the Panel of Experts following investigations into incidents of Iranian non-compliance, or following up with Iran itself. The Committee was often divided in its judgements about the quality of the Panel's work. Perhaps the most telling indicator of the Committee's collective view was that it implemented only a few of the 55 recommendations contained in Panel final reports.²⁵² As a result, the Panel's final recommendation was that "... the Panel refrains from additional recommendations to those already proposed in the Panel's previous final reports".²⁵³

The Panel carried out its mandate by means of three main activities. The first, visits by the Panel, encouraged States to gather relevant information and review implementation procedures beforehand, and to seek views of the Panel regarding best practices of sanctions implementation. Such consultations undoubtedly improved the effectiveness of implementation of sanctions by States. They also usually provided the Panel with important information on the challenges of implementation of sanctions and on possible violations. The Panel was invited to visit more than 80 States, some on two or three occasions.

In addition the Panel conducted a programme of outreach to States, the private sector (banks, manufacturers, freight forwarders, carriers, insurance companies, etc.) and academia by means of seminars or workshops organised by think tanks or academic institutions. As a result of consultations and outreach, the Panel built up strong cooperative relationships with many States and private sector entities.

The Panel also conducted formal inspections of cargoes seized, interdicted²⁵⁴ or otherwise reported by States as possible violations of sanctions. More than 50 items were inspected or investigated on

252 30 of which can be found in the 2011 final report that the Council decided not to publish on the UN website.

253 2015 Panel report.

254 Interdiction as used herein refers to the act of stopping goods in transit – most usually based upon intelligence information. The legal basis for such actions was usually UN sanctions resolutions.

these bases and detailed reports submitted with recommendations for Committee action. The great majority of cargoes inspected or investigated by the Panel were seized on the basis of “catch-all provisions”. Many items fell below control thresholds. Less than 10% of the items were listed by NSG or MTCR,²⁵⁵

It is not clear why, of those items inspected by the Panel, so few fell within the control lists. It is possible that States chose to report interdictions of non-listed items but not of listed items, although this would seem unlikely since it is often easier for a State to justify seizing an item listed under UN resolutions, and thus prohibited for transfer to Iran, than on the basis of “catch-all provisions” which require a determination by the State itself. It is also possible that the state of development of Iran’s prohibited activities was such that Iran did not need to procure many listed items. It is also possible that some goods and materials included in NSG and MTCR lists relate to items that can be substituted by State-sponsored proliferation programmes. It is also possible that States failed to detect listed items that they were in a position to interdict, or that they were not supplied with relevant information by other States.

It is also notable that at least some cases probably relevant to UN sanctions were not, in fact, reported to the Panel.²⁵⁶ For example, the Cheng case noted above was not reported to the Panel despite there being a prima facie case to conclude that the case constituted a violation of UN sanctions on Iran.

While there may be many reasons for this, it is possible that some may have been related to the Panel itself. Concerns have been

255 Listed items included high-grade carbon fibre, aluminium 7075 alloy, aluminium 2024 alloy and titanium alloy (see for example, Annex 2 of the Panel’s 2014 Report).

256 For example, the Cheng case noted above was not reported to the Panel despite there being a prima facie case to conclude that the case constituted a violation of UN sanctions on Iran.

expressed elsewhere about the objectivity of UN panels of experts established in support of sanctions committees, and calls made for appointments on the basis of expertise and merit.²⁵⁷

4. EXAMINING EFFECT OF UN MEASURES ON IRAN'S PROHIBITED ACTIVITIES

As mentioned above, Iran refuted the authority of the UN Security Council to take up the nuclear file and refused to comply with the requirements of the resolutions. Iran ignored the resolutions and pursued its nuclear programme.

The primary manifestation of this was Iran's refusal to suspend uranium enrichment and its work on heavy water reactor and related facilities at Arak. However, Iran also continued ballistic missile development and arms imports/exports. Between imposition of the first UN sanctions resolution in 2006, and cessation of work under the JPA in November 2013, Iran advanced its programmes considerably. Examining the effect of the arms embargo is beyond the scope of this paper. Nonetheless, it is worth examining developments of Iran's nuclear and missile programmes.

4.1. Nuclear

When the Security Council adopted its first resolution on Iran, the country had only 164 centrifuges deployed at the above-ground pilot fuel enrichment plant at Natanz. By the time that the Joint Comprehensive Plan of Act was agreed in July 2015, Iran had amassed a substantial nuclear infrastructure. Iran had deployed around 16,500 centrifuges at its Natanz enrichment site and around

257 See for example, page 25 and Recommendation 36 of the Compendium of the High Level Review of UN Sanctions, June 2015), UN document A/69/241-S/2015/432.

2,710 centrifuges at its Fordow enrichment site.²⁵⁸ Around 1,000 of the installed centrifuges were of a more advanced design (the IR2m and the IR4) although with the exception of a small number devoted to R&D, none of these had been fed with UF6. These designs represent a considerable advance in capability over the IR1.

By mid-2015 Iran had therefore certainly mastered enrichment – at least through the IR1 centrifuges. It could be argued, however, that Iran had not been able to advance more rapidly to use of the more advanced designs precisely because of UN sanctions which slowed Iran’s ability to procure the necessary materials (e.g. high strength carbon fibre, maraging steel).

Iran’s ability to produce key items indigenously is limited and it cannot produce key materials required for higher performance centrifuges (IR-2s, Ir-4Ms), see Table 2 below.²⁵⁹

Item	Specifications	Current Indigenous Production Capability
Rotors	Aluminium 7075	Possibly
	High-strength Carbon Fibre	No
	Maraging Steel	No
Casings	Aluminium 6061	Yes
Piping	Aluminium 6061	Yes
Lubricant	Flourinated Oils	Probably not
Frequency Converters	Capable of output beyond 1000hz	Yes
Pressure Transducers	Corrosion-resistant	No

This table illustrates the necessary scope of Iranian procurement of dual-use goods from outside of the country for production

258 IAEA Board of Governors, ‘Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran,’ GOV/2014/58, 7 November 2014, <http://www.iaea.org/sites/default/files/gov2014-58.pdf>, accessed 8 December 2014.

259 Table reproduced from; Stewart, I., Gillard, N., “Iran’s illicit procurement activities: past, present and future’, 24 July 2015. Available online at: http://www.projectalpha.eu/proliferation/item/download/60_934e53cf3172986aac0bdd9eb4307da1 (Accessed 25 February 2016).

of higher performance centrifuges. It is not possible to conclude definitively how much of the materials and equipment Iran acquired during the sanctions period, nor the extent to which Iran tried to substitute below-threshold items. However, it is understood that when Iran implemented the Additional Protocol prior to 2006, the IAEA found parts for around 5,000 IR-1 centrifuges.

Iran's heavy water facilities have similarly grown since they first became public in 2002. In 2003, Iran announced to the IAEA that it was constructing a heavy water production plant at Arak and plans for construction of a heavy water reactor.²⁶⁰ The heavy water production plant was producing heavy water from 2006.²⁶¹ The heavy water reactor was close to completion but did not go critical at the time that the Joint Comprehensive Plan of Action was concluded in 2015.

Less information is available about Iranian procurement for the heavy water reactor and related facilities compared to the enrichment facilities. However, a number of significant individual cases have come to light. For example, between 2007 and 2009, Iran sought 1,767 valves for the heavy water reactor from Europe and India. Of this number, 1,163 valves are believed to have reached Iran's programmes. This case was reported to and investigated by the Panel of Experts.²⁶²

4.2. Missile

Iran did not suspend development of its ballistic missile programme as required by UN Security Council resolutions. Iran created a number of new types of ballistic missile procurements and further developed a number of existing systems. Iran also engaged in extensive illicit procurement for missile end uses.

260 Gov/2004/11, IAEA "Implementation of the NPT safeguards Agreement in the Islamic Republic of Iran", 13 March 2004.

261 Gov/2014/10, IAEA "Implementation of the NPT safeguards Agreement in the Islamic Republic of Iran", 20 February 2014.

262 UN Panel of Experts established pursuant to Resolution 1929 (2010), Final Report 2013.

Missile Name	Type	Range		Payload	
Fajr-3	Solid	45	km	45	kg
Fajr-5	Solid	70-80	km	90	kg
Fateh-110	Solid	200	km	500	kg
Ghadr-1	Liquid	600	km	750	kg
Iran-130/Nazeat	Solid	90-120	km	150	kg
Nazeat-6	Solid	100	km	150	kg
Nazeat-10	Solid	140-150	km	250	kg
Oghab	Solid	40	km	70	kg
Qiam 1	Liquid	500-1000	km	500	kg
Sejil/Ashura	Solid	500	km	750	kg
Shahab-1	Liquid	300	km	1,000	kg
Shahab-2	Liquid	500	km	730	kg
Shahab-3	Liquid	800-1300	km	100	kg
Zelzal-1	Solid	125	km	600	kg
Zelzal-2	Solid	200	km	600	kg

Shortly after the conclusion of the Joint Comprehensive Plan of Action in 2015, Iran conducted tests of two new missiles. The characteristics of these systems is noted below.

Missile Name	Type	Range		Payload	
Fateh-313	Solid	500	km	<500	kg
Emad	Liquid	1,700	km	<750	kg

No data are available on the number of each type of missile held in Iran's inventory. With the exception of missile tests, there is also a lack of visibility around Iranian ballistic missile developments to allow conclusions to be reached about Iranian missile developments during the sanctions period. Nonetheless, it is clear from the fact that Iran had two new versions of missiles ready to test at the end of the sanctions period that substantial development did take place.

4.3. Unilateral measures

There are a number of instruments in addition to UN sanctions that may have contributed, directly or indirectly, to the goal of frustrating Iran's prohibited activities, principally unilateral (or autonomous) sanctions.²⁶³ There are overlaps between UN and unilateral sanctions that makes it difficult to identify the effects of specific measures, but is nonetheless valuable to explore them.

Unilateral sanctions were adopted by some states in order to increase the pressure on Iran to negotiate over its nuclear programme. In some cases however, the primary purpose of these measures has been broader than the concerns about Iran's nuclear programme. For example, sanctions have been adopted by the US and EU in response to Iran's support of terrorism and human rights violations.

The United States has gone farthest in adopting sanctions against Iran. The US has had in place a near embargo on trade by its nationals with Iran for many years following the seizure of the US Embassy in Tehran in 1979. In fact, with the possible exception of food and similar transactions, the level of trade between the US and Iran was so low that it seems doubtful that sanctions measures could reduce trade further. In order to increase the impact of its unilateral sanctions, the US also adopted so-called 'extraterritorial' measures intended to influence the decisions of non-US individuals and entities, based outside the United States. These measures include:

- A. A prohibition on dealings with "Specially Designated Nationals" (SDNs). SDNs are similar in intended effect to designations of individuals and entities under UN resolutions (but probably carry additional weight because of US enforcement practices). There are signs that this type of measure was effective in persuading many foreign companies, including major Chinese entities from trading with Iran. However, proliferators have been dynamic

263 Interdiction as used herein refers to the act of stopping goods in transit – most usually based upon intelligence information. The legal basis for such actions was usually the UN sanctions resolutions.

enough in nature to quickly set up new companies with the purpose of bypassing the effect of SDNs and similar measures under other autonomous sanctions regimes.

- B. Financial sanctions: the US (followed by the EU) adopted a range of measures intended to ensure that Iran could not misuse the financial system to facilitate its financing of proliferation. These measures were coupled with substantial fines for banks found to be in non-compliance (including many non-US banks). Iran was designated a jurisdiction of primary money-laundering concern in November 2011 under Section 311 of the USA Patriot Act. Separately, the Financial Action Task Force called for its members to apply counter-measures to deal with money laundering and financing of terrorism risks in connection with Iran (although sanctions as such were not specified). Major Iranian banks were cut-off from the SWIFT messaging system in March 2012 following EU sanctions against provision of financial messaging services to Iranian banks. Financial sanctions and other measures thus had a substantial impact on international banks' ability to do business with Iran and the practical effect of all this was that western banks all but eliminated business relationships with Iran. Problematically, however, little is known about how Iran pays for items that it acquires illicitly, which of course make up only a very small proportion of Iran's financial transactions with the outside world. As such, it is difficult to determine whether these financial measures had a substantial effect in constraining Iran's prohibited activities. What can be concluded with certainty is that these measures made it significantly difficult for Iranian entities to access the international banking system and this had a major impact on Iran's economy.

A third important set of unilateral sanctions related the oil and gas sector. The US (and from 2010, the EU) imposed restrictions on the export of oil and gas from Iran and on investment in Iran's oil and gas sector. These measures certainly affected Iran's

economy, with foreign currency reserves, for example, reducing sharply after 2010. While such measures likely also contributed to popular pressure in Iran to resolve the nuclear issue. However, it seems unlikely that the level of economic hardship caused by these sanctions would have directly affected funding Iran's nuclear and missile programme. President Ahmadinejad claimed in 2011, for example, that the budget of the Atomic Energy Organization of Iran was 300 million US dollars per year – a small percentage of the Iranian government's budget.

4.4. Interdiction and enforcement

UN sanctions resolutions on Iran included requirements for States to prevent the transfer of prohibited goods and materials to Iran. Although under UN resolutions, the lists of prohibited goods and materials were restricted to versions of the NSG and MTCR lists, the categories of prohibited goods and materials were significantly widened under unilateral regimes (particularly the US and EU). Goods and materials were intercepted by many countries either following enhanced customs checks and procedures or interdiction operations. Enhanced customs checks and procedures involved careful scrutiny by the authorities of exports to Iran, and outreach and engagement of firms that might produce the types of items that Iran's prohibited programme required, or might be involved in the shipping process. Interdiction operations were usually carried out on the basis of intelligence (possibly shared by partner States) that goods and materials were thought to be either in violation of sanctions or otherwise intended to support Iran's prohibited activities. Details of the number of such 'interdictions' that have taken place are not available. Nonetheless, the authors believe that perhaps a hundred so shipments have been detained in this way.

As noted above, some of these cases resulted in reports being made to the UN sanctions panel of experts. However, it is apparent that many such cases were not, in fact, reported, particularly if they involved goods or materials which, although banned under autonomous regimes, were not banned under UN resolutions. The authors

note that Resolution 2231 (2015) contains no provisions explicitly requiring States to report interdictions, so it is possible that future such incidents might not be reported. This would be a missed opportunity to bring any evidence of possible Iranian non-compliance with the JCPOA to the attention of the Security Council.

5. CONCLUSIONS

The purpose of UN sanctions on Iran was to slow development of Iran's nuclear programme and encourage Iran to enter into a diplomatic process to resolve it. The contribution of UN sanctions should be judged against this objective, even though UN sanctions were also used as the basis for unilateral measures adopted by States, including the US and EU Member States.

Iran lacked, and continues to lack, the ability to produce indigenously many items required in its nuclear and missile programmes. Iran was dependent on acquiring these items abroad. It is possible however that Iran had stocks of goods and materials prior to the sanctions taking effect. And it made strenuous efforts to indigenize production of prohibited goods and materials (such as carbon fibre). It should be assumed that not all attempts by Iran to procure goods during the sanctions period were stopped and that, despite the substantial number of shipments that were interdicted, it is likely that Iran was able to obtain substantial amounts of goods and technology while under UN sanctions, between December 2006 and January 2015.

From this examination, it is apparent that while UN sanctions may have slowed development of Iran's nuclear programmes, it did not completely stop it. IAEA reports document the growth of the IR-1 programme, at least, during the period of UN sanctions. But by comparison with the IR-1 programme, Iran appears to have been less successful in bringing into production more advanced centrifuges, and the heavy water reactor at Arak remained far from completion. Furthermore, it is apparent also that implementation

by Member States of UN sanctions measures provided some degree of visibility into Iranian illicit procurement. This is important in its own right as it demonstrates that, as States implement Resolution 2231 (2015), Iran can not expect any future illicit procurement to go undetected.