A COMPARATIVE CASE STUDY ANALYSIS FOR A BREAKTHROUGH OF NORTH KOREA'S DEADLOCK IN THE CASE OF IRAN, UKRAINE AND SOUTH AFRICA

by
Jasmin Kienberger

A thesis submitted to the Department of International Relations of
Webster Vienna Private University in partial fulfillment of the requirements for the Degree of
Master of Arts in International Relations

February, 2019

Vienna, Austria

WEBSTER VIENNA PRIVATE UNIVERSITY

THESIS APPROVAL

A COMPARATIVE CASE STUDY ANALYSIS FOR A BREAKTHROUGH OF NORTH KOREA'S DEADLOCK IN THE CASE OF IRAN, UKRAINE AND SOUTH AFRICA

by
Jasmin Kienberger

APPROVED:

Thesis Supervisor	27/2-2019 Approval Date
Thesis Reader	27-2-2019 Approval Date
Department Head	27/2/2019 Approval Date
Director/Associate Director	4/3/2019 Approval Date

ACKNOWLEDGEMENTS

I would like to thank some people who supported me throughout the challenge to complete this master thesis. A big thank you goes to my advisor, Dr. Jozef Bátora, for his patience and support throughout the whole process. I would also like to thank my reader, Ambassador Dr. Ali Asghar Soltanieh, for his expertise and guidance.

Furthermore, I would like to thank my family for tolerating my long lectures around the topics of non-proliferation and disarmament. I would like to express my deepest appreciation for their endless understanding and care.

ABSTRACT

A COMPARATIVE CASE STUDY ANALYSIS FOR A BREAKTHROUGH OF NORTH KOREA'S DEADLOCK IN THE CASE OF IRAN, UKRAINE AND SOUTH AFRICA

by
Jasmin Kienberger

The emergence of the nuclear crisis with North Korea has renewed scholarly efforts to understand the varying causes of this crisis. This thesis is an analysis of the nuclear crisis of North Korea by doing a comparative case study analysis. This method has been chosen in order to describe the main similarities and contrasts among the cases.

The author used cases that limited their nuclear power potential such as Iran, South Africa and Ukraine. In order to draw a conclusion for North Korea, the author is studying the main domestic conditions that favor countries' agreement on nuclear deals limiting their nuclear power potential. Furthermore, the author is using two main international relations theories, liberal institutionalism and realism, to support the main findings.

The main findings of the analysis why states limited their nuclear power potential are domestic regime transitions, high cost of nuclear program, international sanctions, regional stability, international pressure to sign the NPT, independence, operational difficulties, economic hardship and nuclear accidents.

Even though the challenges of all case studies distinct in many ways, some same patterns can be illustrated. As the analysis shows, North Korea is still in need of certain domestic changes. Several parties play an important role when it comes to the crisis of North Korea. Not only the EU and the UN but also South Korea, the US, Japan and China have a specific role within this conflict.

As history shows, agreements sometimes also end. In 1994 the US and the DPRK agreed to the Agreed Framework but it ended in 2003 due to the fact that the hostility between the two countries grew. North Korea also withdrew from the NPT after the country ended the agreement. After conducting research on all cases studies the author can say that there is hope for future negotiations with North Korea. Western states and international organizations need to take this opportunity with caution as the cost of failure can be very harmful for the human society.

TABLE OF CONTENTS

LIST OF FIGURE AND TABLE

LIST OF ABBREVIATIONS

AEB	Atomic Energy Board
ALCM	Air-launched cruise missiles
ANC	African National Congress
CTBT	Comprehensive Nuclear-Test-Ban Treaty
CTBTO	Comprehensive Nuclear-Test-Ban Treaty Organization
CWC	Chemical Weapons Convention
DPRK	Democratic People's Republic of Korea
EBRD	European Bank for Reconstruction and Development
EIB	European Investment Bank
EU	European Union
EURATOM	European Atomic Energy Community
FDI	Foreign Direct Investment
FMCT	Fissile Material Cutoff Treaty
IAEA	International Atomic Energy Agency
ICBM	Intercontinental Ballistic Missile
INF	Intermediate Range Nuclear Forces
JCPOA	Joint Comprehensive Plan of Action

KOTRA	Korean Trade-Investment Promotion Agency
LWR	Light Water Reactor
MEK	Mujahedin e Khalq
MFA	Ministry of Foreign Affairs
MKO	Mujahedin e Khalq Organisation
NAC	New Agenda Coalition
NAM	Non-Aligned Movement
NATO	North Atlantic Treaty Organization
NCRI	National Council of Resistance
NNWS	Non-Nuclear-Weapon State
NP	National Party
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
NSG	Nuclear Suppliers Group
NWS	Nuclear-Weapon State
OSCE	Organization for Security and Co-operation in Europe
PNE	Peaceful nuclear explosives
R&D	Research & Development
RUSI	Royal United Services Institute

SIPRI	Stockholm International Peace Research Institute
SLBM	Submarine-launched ballistic missile
START	Strategic Arms Reduction Treaty
TPNW	Treaty on the Prohibition of Nuclear Weapons
UK	United Kingdom
UN	United Nations
US	United States
USSR	Union of Soviet Socialist Republics
WMD	Weapons of Mass Destruction
WTO	World Trade Organization

1. INTRODUCTION

North Korea has received a lot of attention in the media during the last months. The summit meeting between the leaders of the United States of America and the Democratic People's Republic of Korea was an extraordinary event. The first joint statement was signed and follow-up negotiations between high-level officials are yet to come. This summit opened discussions and many questions in the media between scholars and researchers.

This thesis is an analysis of the nuclear crisis with North Korea in order to understand the causes of it and study different options of limiting the nuclear power potential of this country, which is governed by a communist regime. The basis of this study starts with an analysis of existing deals that limited states' nuclear programs. The special focus in this paper in regards to existing deals is the Iran deal due to the fact that this deal is of great importance when it comes to nuclear safety. Moreover, the paper provides an in-depth overview of the conditions of states that enter a deal that is limiting their nuclear power potential in order to compare the results of the analysis with the case of North Korea. The main research question of this thesis is the following: Are there specific domestic conditions that favor countries' agreement on nuclear deals limiting their nuclear power potential?

Summarized, the research goal of this thesis is to determine which conditions are present in North Korea to implement a deal to limit its nuclear power potential. Qualitative research methods will be used to achieve this analytical goal. In addition, the author is using assumptions of realisms and liberal institutionalism of the international relations debate to strengthen the results of the qualitative analysis.

In the years before negotiations started between Iran, the 5+1 (five permanent members of the United Nations Security Council – China, France, Russia, United Kingdom, United States – plus Germany) and the European Union, Iran's relationship with the international community has been overshadowed by growing tensions and mistrust due to the fact of lack of confidence in Iran's nuclear program. Iran is one of the oldest civilizations in the world and its people are justifiably proud of their history, heritage and culture. Furthermore, Iran is located at a geographical crossroads and has great natural resources (Jiechi, et al., 2008).

In June 2006, the Foreign Ministers of China, France, Germany, Russia, the United Kingdom and the United States of America, joined the endeavor by the European Union High Representative for the Common Foreign and Security Policy to change the state of affairs and set out an ambitious proposal for a broad-based negotiation. In this proposal, the Foreign Ministers offered to work with Iran on a modern nuclear energy program, with a guaranteed fuel supply, and also prepared themselves to discuss political and economic issues. In order to seek a comprehensive and proper solution of the Iranian nuclear issue, which is also consistent with the relevant United Nations Security Council resolutions, proposals in the following areas have been made:

- Nuclear Energy
- Political
- Economic
- Energy Partnership
- Agriculture
- Environmental Infrastructure
- Civil Aviation
- Social and Human Development/Humanitarian Issues
- Implementation Mechanism

As far as nuclear energy is concerned, the main points in the proposal are the reaffirmation of Iran's right to nuclear energy for exclusively peaceful purposes in conformity with its obligations under the NPT (Non-Proliferation Treaty), the provision of technological and financial assistance necessary for Iran's peaceful use of nuclear energy and the support for the resumption of technical cooperation projects in Iran and by the IAEA (International Atomic Energy Agency). Furthermore, the states mentioned above were ready to support construction of LWR (Light Water Reactor) based on state-of-the-art technology, support for R&D (Research and Development) in nuclear energy, provision of legally binding nuclear fuel supply guarantees and cooperation with regards to management of spent fuel and radioactive waste. Politically speaking, the proposal was to improve the six countries' and the EU's relations with Iran and build up mutual trust. In addition, encourage direct contact with Iran, support Iran in playing an important role in international affairs, promotion of dialogue and cooperation on non-proliferation, regional security and stabilization issues, and work with Iran and others in the region to encourage confidence-building measures and regional security (ibid).

The economic proposals were steps towards the normalization of trade and economic relations, such as improving Iran's access to the international economy, markets and capital through practical support for full integration into international structures, including the World Trade Organization, and to create the framework for increased direct investment in Iran. Furthermore, offers for support for agricultural development in Iran were suggested to facilitate Iran's complete self-sufficiency in food. In order to ensure a strong environmental infrastructure, the proposed offers were to develop transport infrastructure including international transport corridors and support for modernization of Iran's telecommunication infrastructure for the removal of relevant export restrictions (ibid).

As far as civil aviation is concerned the restrictions also wanted to be removed of manufacturers exporting aircraft to Iran to enable its civil aviation fleet and to assist Iran to ensure that Iranian aircraft meet international safety standards. To help Iran in terms of their humanitarian issues the 5+1 states and the EU (European Union) proposed supports in partnerships between Higher Education Institutions for example public health, rural livelihoods and joint scientific projects as well as cooperation in the field of development of effective emergency response capabilities (earth quake research, disaster control, etc.) (ibid). These points seem to be very beneficial for Iran. When looking at North Korea the author realizes that this country could use some points in order to restore the nuclear issues and have a better cooperation with the international community. However, Iran committed to addressing all the outstanding concerns of the IAEA through full cooperation with the organization.

Iran also suspended all enrichment-related and reprocessing activities to be verified by the IAEA and resume implementation of the Additional Protocol. Achieving this with North Korea would be a great accomplishment in the world of international relations (Solana, 2006).

All these reasons in this proposal were the start for a broad-based negotiation that ended in a deal called the Joint Comprehensive Plan of Action (JCPOA). Domestic conditions seem to have implications for sates' decisions in signing up to nuclear deals. Therefore, this thesis provides an in-depth study of the domestic conditions of states as these seem to be essential for understanding reasons why states are willing to sign up to nuclear deals.

Furthermore, the author is to using further cases for comparative purposes in order to draw a conclusion and also represent different regions of the world. Cases like Ukraine's and South Africa's denuclearization program are also analyzed to get an insight into each specific case and illustrate their motivations. Many nuclear experts and diplomats are very concerned about North

Korea due to the fact that they disregarded all warnings to carry out nuclear tests and claims to have nuclear weapons capable of striking the United States. Iran, under the President Hassan Rouhani was able to successfully negotiate the JCPOA with the six world powers namely the United States, Russia, China, Great Britain, France and Germany.

This deal has several positive effects, not only to use the nuclear program for peaceful purposes but also for the Iranian economy. Furthermore, the deal promotes objectives central to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and gives hope to democracy and stability in the region. Same is true for Ukraine and South Africa.

Therefore, the author is examining whether these deals could serve as a model for opening up opportunities for North Korea and other countries as well to stabilize the region in exchange for using the nuclear program peacefully. Using nuclear power for peaceful purposes is in the interest of everyone, not only for people from the government or international organizations. The accident of Chernobyl in 1986 showed that every single person can be affected. This is the reason why the nuclear power plant safety approach was revolutionized and the thinking of nuclear power changed. This has resulted not only in literature seeking to explain this phenomenon but also in a wide range of literature on providing solutions for North Korea.

Explaining the North Korean threat is important due to the fact that North Korea conducted its sixth nuclear test on September 3, 2017. Furthermore, North Korea tested a hydrogen bomb, which is more destructive than the bombs that were tested before. Experts agree that North Korea and their nuclear weapons are posing an increasing threat for the rest of the world. The hydrogen bomb that was used for the test in September was estimated to be at least 100 kilotons, which is almost seven times the size of the bomb that was dropped on Hiroshima. During the fifth nuclear test of

North Korea the power of the bomb was between 10 and 30 kilotons. Therefore, the technology of North Korea's nuclear weapons has grown dramatically over the last years.

Another big threat is the reach of their inter-continental ballistic missile (ICBM) that was launched in September, 2017. This ICBM reached an altitude greater than 3700 kilometers. This means that a flatter trajectory could place it within the reach of the US mainland. The US has never been attacked by weapons of mass destruction. The provocations of North Korea were irritating for the US and therefore openly consider military attacks against North Korea (Lee, 2017).

By utilizing a qualitative approach, the research offers insight into the patterns that can be observed in conditions underpinning operating non-proliferation programs. First the author starts to work on the differences between Iran, South Africa, Ukraine and North Korea to understand all issues. Furthermore, the author is working on the preconditions for Iran, South Africa and Ukraine in order to find out whether this would be a model for North Korea too. In addition, the author is focusing on how this would look in practice and the role of several states. The role of international organizations is also a part of the studies.

While the sources of Iran's, South Africa's and Ukraine's nuclear ambitions are comparable in some respects to those of North Korea, the statuses and implications of the programs differ both in technical and political ways. Iran's nuclear program for example is less advanced and the concerns focused on disclosures of previously unknown practices. The plant at Iran's uranium centrifuge enrichment facility at Natanz could produce between 10 and 12 kilograms of weapons-grade uranium annually. A planned larger plant would produce 400 to 500 kilograms annually which is enough for 15 to 20 nuclear weapons a year (Huntley, 2006). Iran's uranium enrichment activity does not violate its NPT commitments or IAEA safeguard obligations. Unlike North Korea, Iran's leadership was constantly committed to develop only peaceful nuclear energy. Iran

and the EU representatives Germany, France and Britain reached agreement on the 21st of October, 2003 that Iran would abide by the IAEA Additional Protocol and voluntarily suspend all uranium enrichment activities. This culminated in a second E3 and Iran agreement on the 14th of November, 2004, reaffirming the previous agreement. The unexpected election in June 2005, of the conservative populist Mahmoud Ahmadinejad as president, introduced a more volatile and aggressive character into Iranian diplomacy. In 2006, Iran responded that it would end its voluntary suspension of uranium enrichment and began to operate the Natanz facility, which certainly aggravate tensions and uncertainties across the Middle East (Huntley, 2006). Furthermore, the file was still open at the IAEA after more than two years of voluntarily suspend uranium enrichment activities and implement the Additional Protocol. The suspension was first stopped at the uranium conversion facility in Isfahan and later the enrichment facility in Natanz.

South Africa's interest in the development of nuclear energy can be traced back to the 1940s. Back then, South Africa had one of the largest uranium reserves in the world and uranium exploitation commenced in 1950, when the Anglo-American agency, the Combined Development Agency, installed equipment in South African mines to produce uranium oxide (Van Wyk, 2014). The case of South Africa is very unique due to the fact that it is the only country to have built nuclear weapons and then voluntarily dismantled them.

Therefore, the author is addressing also these motivations and using this information to draw a conclusion related to North Korea (Nuclear Threat Initiative, 2015). The nuclear history of South Africa is unlike any other in the world which gives hope that their path to disarmament offers a roadmap for other nations too (Kornberg, 2017). The history is also evaluated in this thesis in order to understand the most important happenings until the denuclearization.

Ukraine inherited the world's third largest nuclear arsenal in 1991, as a result of the collapse of the Soviet Union. Ukraine's path towards denuclearization was far from smooth. Soon after its independence in August 1991, Ukraine adopted a more cautious approach to its nuclear inheritance. Ukraine stood committed to become a nuclear free state in the future and did that by denuclearize through treaties with other nuclear powers. Therefore, the author also is addressing these happenings in order to give the reader a good insight into the field of Ukraine's denuclearization (Budjeryn, 2015).

The first chapter described the overall research design and the research goal. Furthermore, the introduction section gave a brief introduction on the case studies. In order to give the reader an insight knowledge, the next chapter gives a detailed explanation on the existing literature.

2. LITERATURE REVIEW

This chapter illustrates the concepts of agreements and treaties. In addition, the author concentrates on the limits of denuclearization namely the worldwide deployment of nuclear weapons and also the limits of several treaties and agreements as the NPT, CTBT, Ban Treaty, New START Treaty, Agreed Framework and Six-Party Talks.

The emergence of the nuclear crisis with North Korea has renewed scholarly efforts to understand the varying causes of this crisis. Any study furthering insight in this area is a valuable step towards understanding the strategy and issues of North Korea. During the last year many scholars have sought to examine the factors of the nuclear issues with several states and also tried to find answers regarding a way of denuclearization. It is difficult to find a solution that fits all issues, particularly because all states have different conditions. Therefore, it is essential to further research this topic.

William J. Perry (2006), analyses the importance to prevent terrorists from obtaining nuclear weapons or materials to reduce the risk of nuclear terrorism. In order to require this, there need to be efforts to keep dangerous nations from going nuclear, especially North Korea. Since the creation of the Democratic People's Republic of Korea (DPRK) in 1948, nuclear proliferation on the Korean peninsula has been a recurring security problem for the United States. A growing nuclear arsenal in North Korea is a security disaster for several compelling reasons, including the likely domino effect on proliferation (Perry, 2006). However, talks with North Korea proved to be difficult. Even though the North Koreans had agreed to end their nuclear program in return for security, economic and energy benefits in September 2005, much if it was owing to quiet by the Chinese. After announcing nuclear tests on October 3, 2006, the Security Council declared the toughest international sanctions against North Korea since the end of the Korean War (Cho & Jung-En Woo, 2007). Cho and Jun-En Woo also underline the importance of a different approach

with North Korea on non-proliferation in order to make gradual, meaningful changes in its social and economic life (ibid). 2007 was different as Pyongyang has been more cooperative with respect to the denuclearization process. However, North Korea failed to meet the December 31 deadline (Haggard & Noland, 2008).

Pyongyang and Washington did reach an agreement in February 2012, according to which North Korea promised to suspend all nuclear tests and uranium enrichment at one of its facilities. In return, the US was to provide North Korea with about one-quarter million tons of food. When North Korea carried out a long-range missile test in April, this agreement was aborted. North Korea officially announced that it is enriching uranium so as to progress toward making uranium-based nuclear bombs in addition to its old plutonium weapons program. Therefore, also the author Hong Yung Lee, argues that the international community is in search for a reasonable policy regarding North Korea. Kim Jong Un is realizing the great need for economic reforms and a long-term survivability of the North Korean regime is questionable (Lee, 2013). As far as the role of several states is concerned, the European involvement with North Korea has been tangible but limited (Choo, 2003).

While all studies have advanced our understanding of the challenges of nuclear proliferation especially in the case of North Korea, still missing is an analysis of the likelihood of a successful model that could work for North Korea when analyzing the cases of Iran, South Africa and Ukraine. This study closes the gap with the research question: **Are there specific domestic conditions that favor countries' agreement on nuclear deals limiting their nuclear power potential?**

2.1.International agreements

In order to study the case of North Korea one needs to start by analyzing the general reasons why states have international agreements. First of all, international agreements are used as a means to influence domestic policy (Brewster, 2004). Governments can improve their national welfare when having an improved international cooperation. There are different reasons of having an international agreement namely for example trade liberalization or a multilateral agreement to reduce pollution and also limiting nuclear power programs. These agreements enable states to pursue reciprocal strategies that enforce cooperative behavior. Institutional theory describes international agreements as a way that facilitates cooperation among states. In addition, treaties are opportunities for mutual gain at the international level (Brewster, 2004).

2.2.Institutionalism versus realism

Through treaties, the school of international relations thought, institutionalism, argues that governments can overcome collective action problems and achieve mutual gains (Keohane & Martin, 1995). Realism theory scholars assume that states are unitary and rational actors that interact with other states in a state of anarchy. This means that there is no overarching authority that could enforce agreements between states. The problem is that states often face a prisoner's dilemma when it comes to international cooperation. Institutionalists argue that states identify that cooperation leads to mutual gains. However, there are also incentives to detect and the prospects of greater gains are not always sufficient. Treaties can be seen as a solution to international collective action problems. Therefore, institutional theory scholars expect that states will form an international agreement whenever there is a possibility of efficiency gains through cooperative behavior (ibid). Institutions serve as bargaining arenas to help states to conclude agreements with each other through cooperation. These institutions provide opportunities for linking disparate

issues into package deals, helping states share information about their behaviors and making side-payments (Smith, 2004).

Institutions seem to push states away from war and promote peace and several international relations theories need to be assessed. Even though institutionalism is mainly viewed from the liberal perspective, one needs to also consider the arguments from the realist perspective due to the fact institutionalist theories is largely a response to realism. Both realists and institutionalists disagree when it comes to the institutions' affect on international stability. Realists argue that institutions are based on the calculations of the great powers and their self-interest. Therefore, they believe that institutions are not important when it comes to peace. John J. Mearsheimer for example argues that institutions have a minimal influence on state behavior and institutionalist find little support in the historic record. He also defines institutions differently than liberal scholars namely that *institutions are a set of rules that stipulate the way in which states should cooperate and compete with each other* (Mearsheimer, 1995). This set of rules are normally defined and formalized in international agreements.

It is important to explain why there are recognized nuclear weapon states that ratified the NPT and still violate for example article VI of the treaty that says:

Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.

Analyzing why there is no disarmament of the nuclear weapons states by using the assumptions of the realist theory is important. The first assumption is that the international system is anarchic,

which means that there is no government over government. However, this does not mean that the order is chaotic but more that states are independent political units in the system. The second assumption is that states possess offensive military capabilities, which could possibly destroy each other. The third and most important assumption in the case of the nuclear weapons states and their non-disarmament is that states can never be certain about the intentions of others states. This means that there is a big uncertainty involved and cooperation is limited. Another important assumption for this matter is the motive that is driving states is survival because states want to maintain their sovereignty. The last assumption is that states think strategically about how they can survive in the international system because miscalculations can occur due to the fact of imperfect information. Patterns of the realist school are resulting to this kind of behavior. States fear each other and they regard each other with suspicion, which means that there is little room for trust. Political competition is dangerous and can lead to war, which can in extreme cases lead to a total destruction of a state. Furthermore, states aim to maximize their relative power positions, which means that the greater the military advantage, the more secure it is over other states, ideally being the hegemon in the system (Mearsheimer, 1995).

2.3.Reasons for international agreements and treaties

A good reason for governments to commit to an agreement or treaty is the socially-optimal level of public work projects and providing citizens with stable expectations about government policies. Furthermore, when states enter into a treaty, they are obligated under international law to accept the terms of the agreement. Otherwise, states face international sanctions or other responses to a treaty violation. Often domestic groups have used treaties to embed policies into their political system (ibid).

2.4.International cooperation for nuclear non-proliferation

Nuclear proliferation is an international security challenge. In 1946, Bernard Baruch, US representative, proposed the creation of a UN Atomic Development Authority as an oversight body to control the aspects of the nuclear fuel cycle. However, the Soviet opposition scuttled the deal. Therefore, in the 1950s and 1960s the number of nuclear weapons states was on the rise. In 1968, the NPT was opened for signature at the UN and it was the foundation of the non-proliferation regime that included a network of multilateral non-proliferation agreements, safeguards and export control. The NPT established three pillars:

- Non-proliferation → nonnuclear weapon state will not acquire nuclear weapons and nuclear weapons states will not share them
- Peaceful use of nuclear energy and civilian cooperation → states have the right to develop use, production and research of nuclear energy without discrimination and with the support from the IAEA
- Disarmament → nuclear weapons states should have negotiations in good faith regarding cessation of the nuclear arms race and disarmament

The IAEA concluded safeguard contracts and started with regularized inspections with member states. The five declared nuclear weapons states had a special status by the treaty back then and dominated the decision-making process of the organization. The NPT had 190 member states, nearly universality. In 1974, it seemed that the regime decayed when India carried out nuclear tests. In response to these tests, countries formed the London Suppliers Group to control the spread of technologies that could be possibly used for clandestine weapons programs. The Nuclear Suppliers Group (NSG) was established by seven member states and created a list of nuclear material, equipment and technology to be controlled. The NSG faced, however, immediate

problems. The members disagreed quickly over many specifics of the nuclear trade and member states divided into two groups. The US, Australia and Canada held the control of the supply of uranium and Germany, Switzerland, France and Belgium dominated technology exports for the nuclear fuel cycle. From 1978 to 1991, states began to break the principles of the NPT. Iran, Iraq, Libya and North Korea began their clandestine nuclear programs. Non-signatories like Brazil and Argentina launched their nuclear programs and South Africa built a nuclear device. States started to have their own deals to share sensitive technologies or elements of the entire nuclear fuel cycle. Germany for example provided Brazil with elements for the fuel cycle in 1975, and France had contracts with Pakistan and South Korea on reprocessing plants. China provided technology and assistance to Pakistan. The tests of India and Pakistan in the 2000s showed countries that it was possible to break the rules of the NPT. The IAEA Board of Governors passed the Additional Protocol in 1997 with a more thorough nuclear inspection program. However, the NSG could not reach consensus. Since 2000, it got more and more difficult for diplomats to find a common ground on standards. Also developing countries of the Non-Aligned Movement expressed more criticism of the great powers to accept Article VI. Experts say that this time was the biggest failure in the history of the NPT. Therefore, states moved toward bilateral arrangements to pursue non-proliferation objectives. Also, the Atoms for Peace was designed to help developing countries to achieve the promises of nuclear energy. Several memoranda of understanding for nuclear cooperation were signed between the Bush administration and Saudi Arabia, the United Arab Emirates, Jordan and Bahrain (Hughes, Lantis, & Solís, 2014). To conclude, one can say that non-proliferation is a big challenge even though there are treaties and agreements. The author is going into more detail including the main assumptions of international relations theories in the next chapter.

2.5. Worldwide deployment of nuclear weapons

It is estimated that there are nearly 15,000 nuclear weapons located at around 107 sites in 14 countries. Roughly 9,400 of these weapons are in military arsenals and the remaining weapons are retired and awaiting dismantlement. 4,150 are operationally available and some 1,800 are ready for use on short notice. The largest concentration of nuclear weapons resides in the United States and Russia, which accounts for 93 percent of the total global inventory (Kristensen & Norris, 2017).

There are seven other nuclear weapon states (France, United Kingdom, China, Israel, India, Pakistan and North Korea) and five non-nuclear states (NATO allies – Germany, Italy, the Netherlands, Belgium and Turkey), which host 150 US nuclear bombs at six air bases (Kristens & Norris, 2015).

2.5.1. Russia

Russia stores nuclear weapons at approximately 48 locations and is by far the largest number of all nuclear-armed states. However, there was a significant reduction in the last years. In the late 1990s Russia was using 100 sites, in the mid-1990s the number of sites was 250, and 500 in 1991. Yet, there is a great uncertainty due to the fact that the Russian government provides almost no information about its nuclear warhead storage program. Even though Russia hands over a detailed list of its deployments to the US government under the terms of New START, the Western government is not sharing any information (ibid).

2.5.2. United States

The United States stores their nuclear weapons at 18 sites, including 12 sites in 11 US states and another six sites in four European countries as well as Turkey (ibid). These European countries as well as Turkey are non-nuclear weapon states part of the NPT (Soltanieh, 2018).

2.5.3. China

China has an almost complete official secrecy of their nuclear forces. Researchers estimate that China may have nuclear warheads at 12 facilities (ibid).

2.5.4. UK and France

Both the UK and France have reduced the size of their arsenals. The UK has only one type of nuclear weapons which are located at two facilities in Scotland and the warheads are located in two factories southwest of London. France has two types of nuclear weapons. The estimate is that the French warheads are spread over seven locations (ibid).

2.5.5. Pakistan, Israel and India

Both states do not have any official public information and their opacity of its nuclear weapons program is a big challenge for researchers. However, researchers cautiously estimate that Pakistan stores nuclear weapons at nine locations and Israel might store nuclear warhead components at five locations. India's 120 to 130 nuclear warheads are stored at least five locations (ibid).

2.5.6. North Korea

North Korea has conducted six nuclear tests and produced sufficient material to make around 20 weapons. However, North Korea's nuclear program is still uncertain so it is unclear where any weapons would be stored (ibid).

2.5.7. Deployment and the NPT

Article I of the NPT says as follows:

"Each nuclear-weapon State Party to the Treaty undertakes not to transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly, or indirectly; and not in any way to assist, encourage, or induce any non-nuclear-weapon State to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, or control over such weapons or explosive devices (Treaty on the Non-Proliferation of Nuclear Weapons, 1968)*."*

This means that the deployments of nuclear weapons on a territory of a non-nuclear weapon state is a violation of the NPT. In addition, training a NNWS on the use of nuclear weapons is also a violation of article I (Soltanieh, 2018).

Article II of the NPT points out that *"each non-nuclear-weapon State Party to the Treaty undertakes not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices; and not to seek or receive any assistance in the manufacture of nuclear weapons or other nuclear explosive devices* (Treaty on the Non-Proliferation of Nuclear Weapons, International Atomic Energy Agency, 1968)*."*

This means that as long as the sites of US nuclear weapons are still on the territory of the NNWS, they are violating article II of the NPT, unless they renounce their sovereignty of the territory to the United States (Soltanieh, 2018).

2.6. Treaties

There are various treaties that try to limit, ban, control or reduce nuclear test, weapons and proliferation. In this chapter, the author is going into detail on the main treaties and test the hypothesis to see whether treaties are effective for non-proliferation of nuclear weapons.

2.6.1. Non-proliferation Treaty

There are different methods of non-proliferation and one main method is the creation of treaties. Other methods include the creation of conventions, laws, regulations and also non-binding codes of conduct. The best example in this case is the Non-Proliferation Treaty of 1970, which is also widely accepted namely universally except of five countries (Federation of American Scientists, 2018).

The NPT will have the 50th anniversary in 2020 and with 191 parties the United Nations Charter is the only one more accepted. Members of the NPT have a review conference every five years at the United Nations Headquarters in order to produce an unanimously supported Final Agreed Statement. During the 2015 Review Conference the members of the NPT failed to produce a Final Agreed Statement which is somewhat damaging the stature of the NPT. 2020 will not only be the year of the 50th anniversary but also the next Review Conference. Therefore, there will be high expectations on this conference (Shea, 2017).

2.6.2. Challenges of disarmament and non-proliferation

The most important issue confronting the NPT is Article VI due to the lack of progress on disarmament. The article says:

"Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear

disarmament, and on a treaty on general and complete disarmament under strict and effective international control (Treaty on the Non-Proliferation of Nuclear Weapons, International Atomic Energy Agency, 1968)*."*

The main problem in article VI of the NPT is the lack of a timeline. After half a century there is no progress on the implementation of this article (Soltanieh, 2018).

During the last 50 years there was no progress on disarmament and also the Comprehensive Nuclear Test Ban Treaty (CTBT) has not yet entered into force and also negotiations for the fissile material cutoff treaty have not started. Furthermore, in December 2016, a United Nations General Assembly Resolution agreed upon to have a Conference in order to negotiate a legally binding instrument to prohibit nuclear weapons to overcome the problem of reluctance of nuclear weapons states to consider disarmament. Negotiations should also consider the total elimination of nuclear weapons. Regarding the Treaty on the Prohibition of Nuclear Weapons the drafting is complete and available to sign for states since September 20, 2017. 69 States signed the treaty. However, it is not yet in force (Shea, 2017).

Furthermore, at the 2020 NPT Review Conference it is time for nuclear weapons states to show actions and steps towards nuclear disarmament. Otherwise, the Review Conference is going to fail and members will not find a consensus. There are three different options the five nuclear weapons states could choose from namely signing the Treaty for the Prohibition of Nuclear Weapons (TPNW), start negotiations of a fissile material cutoff treaty (FMCT) that also include provisions for existing stocks of weapon-usable fissile materials or conclude an IAEA safeguards agreement on the use of nuclear material. This is necessary to stop the ambiguities between nuclear weapon states and Non-Nuclear Weapon States (NNWS). Furthermore, it would be difficult for the Review

Conference in 2020 to accept delays like in the Review Conference in 2015. The best outcome of the Review Conference would be to accept the TPNW (ibid).

The NPT does not prohibit the 186 NNWS from having nuclear warships. During the drafting of Paragraph 14 Italy and the Netherlands argued strongly for this. The Article 14 on the non-application of safeguards to nuclear material to be used in non-peaceful activities says as follows:

"14. The Agreement should provide that if the state intends to exercise its discretion to use nuclear material which is required to be safeguarded thereunder in a nuclear activity which does not require the application of safeguards under the Agreement, 18 the following procedures will apply:

(a) The state shall inform the Agency of the activity, making it clear:

(i) That the use of the nuclear material in a non-proscribed military activity will not be in conflict with an undertaking the state may have given and in respect of which Agency safeguards apply, that the nuclear material will be used only in a peaceful nuclear activity; and

(ii) That during the period of non-application of safeguards the nuclear material will not be used for the production of nuclear weapons or other nuclear explosive devices;

(b) The Agency and the state shall make an arrangement so that, only while the nuclear material is in such an activity, the safeguards provided for in the Agreement will not be applied. The arrangement shall identify, to the extent possible, the period or circumstances during which safeguards will not be applied. In any event, the safeguards provided for in the Agreement shall again apply as soon as the nuclear material is reintroduced into a peaceful nuclear activity. The Agency shall be kept informed of the total quantity and composition of such material un-safeguarded nuclear material in the state and of any exports of such material; and

(c) Each arrangement shall be made in agreement with the Agency. The Agency's agreement shall be given as promptly as possible; it shall only relate to die temporal and procedural provisions, reporting arrangements, etc., but shall not involve any approval or classified knowledge of the military activity or relate to the use of the nuclear material therein (IAEA Agreement, 1972)*."*

It is not explicitly stated under Paragraph 14 but it is understood that naval reactors and reactors for other military applications are incorporated. It does not state exactly what alternative measures there are when the safeguards provided for in the Agreement will not be applied. Therefore, those arrangements mentioned need to assure that the naval reactors are not a pathway to proliferation, provide increased transparency and are not connected to nuclear weapons. This is only one specific example of the lack of wording and clear definition of some articles in the treaties. Thus, it is important that nuclear weapon states should look for first steps towards disarmament (Shea, 2017).

Under Article VI of the NPT nuclear weapons states (NWS) are obliged to have negotiations for disarmament. However, there is no deadline for the termination of a nuclear arms race and also no starting point for a new treaty for total disarmament. Furthermore, it does not include any sanctions or legally binding penalties for NWS that did not enforce these obligations. Experts proposed several options to save the NPT namely for example to start negotiations for a legally binding timeline for nuclear weapons states to reduce and finally eliminate nuclear weapons, and also how to deal with non-compliance. Another threat for the NPT is the US withdrawal from the JCPOA. This could also lead to a failure of the Review Conference in 2020 (Soltanieh, 2018).

As also mentioned above, the NPT works in some parts differently than it is stated on paper. There are several challenges (Shahshahani, 2008).

2.6.3. Comprehensive Nuclear-Test-Ban Treaty

The Comprehensive Nuclear-Test-Ban Treaty (CTBT) forbids all nuclear explosions. Furthermore, the treaty does not differentiate between explosions that are for military or peaceful purposes. The treaty includes 17 articles, two annexes, a Protocol and also established the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) (Comprehensive Nuclear-Test-Ban Treaty Organisation, 1996). The treaty bans all kind of nuclear explosions everywhere on earth, underwater and underground, even in the atmosphere by anybody. This treaty impedes NWS to improve their bombs but also for NNWS to develop nuclear weapons. Nuclear explosions damage humans, animals and plants. Therefore, the treaty also prevents these damages. Between 1945 and 1996, there were more than 2000 nuclear tests carried out by the United States, the Soviet Union, France, the United Kingdom and China. Some evidences show that Israel together with South Africa had nuclear tests in 1979. Since 1996, three countries tested nuclear weapons namely India in 1998, Pakistan in 1998, and the Democratic People's Republic of Korea (DPRK) in 2006, 2009, 2013, 2016 and 2017. The treaty was negotiated between 1994 and 1996 in Geneva and 183 states have signed and 164 have ratified it. These states include also nuclear weapons states namely France, UK and Russia. China, Egypt, India, Iran, Israel, the United States and Pakistan still need to ratify the treaty and India, North Korea and Pakistan have yet to sign it (Soltanieh, 2018).

2.6.4. Treaty on Prohibition of Nuclear Weapons

The United Nations General Assembly endorsed a resolution in 2016 for the total elimination of nuclear weapons. The treaty, which is also called the Ban Treaty prohibits states under article I to never "*develop, test, produce, manufacture, otherwise acquire, possess or stockpile nuclear weapons or other nuclear explosive devices; transfer to any recipient whatsoever nuclear weapons*

or other nuclear explosive devices or control over such weapons or explosive devices directly or indirectly; receive the transfer of or control over nuclear weapons or other nuclear explosive devices directly or indirectly; use or threaten to use nuclear weapons or other nuclear explosive devices; assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party under this Treaty; seek or receive any assistance, in any way, from anyone to engage in any activity prohibited to a State Party under this Treaty; and allow any stationing, installation or deployment of any nuclear weapons or other nuclear explosive devices in its territory or at any place under its jurisdiction or control (Ban Treaty, 2017)."

Supporting states of this treaty consider it as a new norm to ban all kinds of nuclear weapons and finally complement the framework of the NPT to totally prohibit and eliminate nuclear weapons. However, also within the European Union most members are against the Ban Treaty. Supporters of the total elimination of nuclear weapons argue that this treaty would be the only way to save the world from a nuclear crisis. However, opponents consider nuclear weapons as an important element to prevent war and conflict due to the fact that an enemy would not attack a state that possesses nuclear weapons. Therefore, it is still an important part of their security policies. Three NATO (North Atlantic Treaty Organization) members (France, UK and the US) confirmed that nuclear capabilities will continue to be an essential element of the strategy of NATO. At the other side, one needs to mention that Austria is one of the key drivers for the Ban Treaty. Austria was also the ninth state that ratified the treaty. In addition, the conference on the Humanitarian Impact of Nuclear Weapons was hosted by Austria in 2014 (Soltanieh, 2018).

2.6.5. New START Treaty

The New START Treaty entered into effect on the 5th of February 2018, which means that the United States and Russia had been required by that date to meet the treaty's limits on strategic arms. The treaty entered into force in February 2011. There was a significant change with the Trump administration compared to the Obama administration regarding the US nuclear policy. The most significant change appears to be the shift from seeking to reduce the number of US nuclear weapons to increase reliance on nuclear weapons. This shift also entails plans to develop new nuclear weapons. The New START's Treaty date into effect coincided with the completion of the Nuclear Posture Review of the Trump administration. This was the first opportunity for the Trump administration to make new steps in regards to US nuclear policy (Kristensen & Norris, 2018).

2.6.6. Nuclear Posture Review

The New Nuclear Posture Review entails a shift in plans to develop new nuclear weapons and modify others. The report emphasizes on the role of nuclear weapons in deterring non-nuclear attacks including also cyber-attacks (Mattis, 2018). This Nuclear Posture Review also declared justification for more nuclear tests. This however, would be a violation of the CTBT even though the United States has not yet ratified the CTBT (Soltanieh, 2018). The report points out that "*although the United States will not seek ratification of the Comprehensive Nuclear Test Ban Treaty, it will continue to support the Comprehensive Nuclear Test Ban Treaty Organization Preparatory Committee as well as the International Monitoring System and the International Data Center. The United States will not resume nuclear explosive testing unless necessary to ensure the safety and effectiveness of the U.S. nuclear arsenal, and calls on all states possessing nuclear weapons to declare or maintain a moratorium on nuclear testing* (Nuclear Posture Review, 2018)."

Ratification is necessary in order the treaty can enter into force. Due to the fact that the US has no intention to ratify the CTBT it can pose a threat to the CTBT. There is the possibility that state signatories may have political or legislative reasons to delay the ratification but the declaration to not ratify the treaty in the future is critical (Soltanieh, 2018). The Trump Administration announces the modernization of nuclear weapons in order to counter the alleged threat posed by China, Russia, North Korea and Iran with global dominance. This is also influencing the credibility of the global non-proliferation policy and determine the future of arms control. Even though the United States plan to modernize their nuclear weapons, the quantity remains within the framework of the New Start Treaty (Richter, 2018).

2.6.7. Agreed Framework US-DPRK

The Agreed Framework was open for signature in 1994 but not has not entered into force yet. The Agreed Framework seeks to solve the issue of nuclear plants in North Korea. The United States and North Korea agreed to replace nuclear related facilities with other alternative energy actions (Arms Control Association, 2018). North Korea agreed to freeze their graphite-moderated reactors and ultimately dismantle its reprocessing facilities. Furthermore, the DPRK allowed the IAEA to monitor their activities and implement the safeguards agreement to also have routine inspections. In return, the US guaranteed North Korea to provide two light water reactors, 150,000 tons of heavy fuel oil and assurances that US is not using nuclear weapons against North Korea. In addition, the US has to reduce trade barriers and other restrictions on investment, telecommunication services and financial services; and improve bilateral relations (Nuclear Threat Initiative, 2011). The agreement ended in 2003 due to the fact that the hostility between the two countries grew. North Korea and the United States failed to improve their relations and North Korea blocked inspections of the IAEA. North Korea announced their separate program that

manufactures uranium-based nuclear weapons in 2002, and the US stopped to produce light-water reactors. In turn, North Korea withdrew from the NPT and therefore ended the agreement (Petruzzello & Sinha, 2014).

2.6.8. The Six-Party Talks

The Six-Party Talks were initiated in 2003 by China, North Korea, Japan, Russia, South Korea and the United States after North Korea withdrew from the NPT and breached the bilateral Agreement Framework of 1994. The main goal was to increase the stability and security on the Korean Peninsula. During the first round of Six-Party Talks in 2003 the parties could not reach an agreement even though all participants approved to continue the talks in the future. During the second round, participants could agree to coordinated steps regarding the nuclear concerns and to also have a third round of talks. However, in 2006, North Korea tested seven missiles and also announced their plans to test a nuclear device as a result of failed talks. Three more rounds followed but produced little progress. Only during the third phase of the last round, North Korea agreed to shut down nuclear facilities. Due to the fact of the failed satellite launch of North Korea, the state declared to pull out of the Six-Party Talks (Center for Nonproliferation Studies, 2012).

This chapter shows the main challenges and limits of non-proliferation and denuclearization. Even though there are treaties, agreements and institutions, the difficulties are still not mastered. As mentioned in this chapter international cooperation is an essential element for treaties or agreements. In the next chapter, the author is supporting these findings with international relations theories.

3. REGIMES AND AGREEMENTS: THEORETICAL APPROACHES

This chapter offers a theoretical approach of regimes and agreements including the main components of an agreement. Furthermore, the author is formulating two hypotheses based on the research design explained in previous chapters.

Many different theories address the challenges of denuclearization in international relations. As already mentioned in the previous chapter, institutionalists and realists do have different assumptions when it comes to non-proliferation. Liberal institutionalists would prefer strengthening the multilateral treaty-based institutions to address the WMD challenges rather than opt for ad hoc and military options. In contrast, realists would be inclined towards the ad hoc and unilateral approaches, including the use of force to ensure the security of the state vis-à-vis other states as well as non-state actors. However, it is equally clear that ad hoc approaches alone are unlikely to be considered legitimate in the short or the long term unless they are linked to the treaty-based regime. Likewise, treaty-based regimes by themselves, despite their solid legal and legitimate credentials, are unlikely to be effective in their objectives unless there are non-discriminatory and universal as well as having a strong enforcement mechanism and verification (Williams, 2008).

All the regimes designed to deal with nuclear weapons face three sets of challenges. The first is posed by states within the existing regimes. Here, states that either withdraw from the regime and build weapons or violate the regime through their weapons programs pose as much of a challenge as states that are dragging their feet over disarmament of their existing arsenals. As far as the nuclear realm is concerned, much attention has been devoted to Iran and North Korea, but not as much effort has been devoted to the huge arsenals and the modernization plans of the five nuclear

weapons states within the NPT. The second challenge comes from states without the existing regimes. In the nuclear arena it includes India, Israel, and Pakistan, which have not signed the NPT, but also states like China, DPRK, Egypt, Iran, India, Pakistan, Israel, and the United States, which have still to ratify the CTBT. The third challenge comes from non-state actors, including but not limited to terrorist groups. All regimes that are related to WMD were designed to deal with state-based nuclear, chemical and biological weapons, and therefore stipulate obligations for state parties and not for non-state entities or individuals. These regimes therefore address the threat from non-state actors only indirectly (ibid).

These challenges have led the international community of states to follow at least three different approaches to address them. First, there is the traditional multilateral institutional approach anchored in negotiated treaty-based regimes, such as the NPT or CWC for example. They are invariably strong in setting norms and principles but tend to be relatively weak when it comes to enforcement. If the treaty-based regime is ineffective in holding member states to their commitments, it is even weaker in its efforts to deal with non-member states and non-state actors. Second, the international community embarked on a series of non-treaty-based multilateral approaches, such as declarations and resolutions of the General Assembly. In April 2005, the General Assembly also adopted the International Convention for the Suppression of Acts of Nuclear Terrorism, which also addresses non-state actors. Third, there are a set of ad hoc, non-institutional, non-conventional approaches led by individual states or a group of state to address the immediate challenges of non-proliferation. These approaches include the so-called preventive war against Iraq's nuclear, chemical and biological weapons in 2003, which was probably the first and perhaps last non-proliferation war, EU3+3 negotiations with Iran, the JCPOA and the Six-

Party Talks to address the DPRK's nuclear ambitions for example. This thesis focuses on the latter approach working on the negotiating approach that addresses non-proliferation (ibid).

Liberals share with constructivists to emphasize the development and spread of international norms in shaping state behavior. They even note that states that developed or inherited nuclear weapons, for example South Africa and Ukraine, were willing to give them up to conform to international normative expectations. Liberals also focus more on the importance of international institutions. In addition, liberals also think that the nuclear non-proliferation regime provides an institutional framework to enable states to forego weapons, for example by rewarding the willing to give up nuclear weapons with access to civilian nuclear technology (Gierco, Ikenberry, & Mastanduno, 2015).

Exponents of the idealist and liberal camp have developed their analyses on three levels: the international level, the domestic level, and the individual level. The international level stresses the importance of international norms of non-proliferation and nuclear non-use in depressing demand for the bomb and the concomitant difficulties of handling norm-rejecting rogue regimes. Most states think of themselves as, and want to be seen as, good international citizens. There is today a widespread acceptance by states that good international citizens do not build nuclear arsenals thanks to the non-proliferation regime. Some states have therefore not gone nuclear. However, some rejected the order and also the non-proliferation norm (Hymans, 2017).

These international norms generate pressure on states and seem to be an important factor why states consider non-proliferation deals. Therefore, this study shows if these factors are present for North Korea and how these international norms pressure these countries in the end due to the fact that they trickle down to the domestic systems.

There are many previous studies that follow the assumptions that the peaceful use of nuclear power can be a big benefit for many countries and the people, the Iran deal was a big success and international organizations help to improve this situation. All assumptions follow the theory that international negotiations of international organizations influence the activities of many states regarding their nuclear power plans. However, previous studies have not covered a specified plan on how this would look like for North Korea and whether international negotiations can change the status quo.

The hypotheses of the thesis are thus as follows:

H1: International pressure to join the NPT lowers the risk of nuclear proliferation.

H2: The economic difficulties and cost of the nuclear program increases the possibility to sign an international nuclear non-proliferation agreement.

Null Hypothesis:

H0: International pressure and domestic economy do not affect nuclear proliferation and the process of concluding a nuclear deal.

It is evident that liberal institutionalists would prefer strengthening the multilateral treaty-based institutions to address these challenges rather than opt for military options. In contrast, realists would be inclined towards ad hoc and unilateral approaches, including the use of force, ensure the security of the state vis-à-vis other states as well as non-state actors.

However, it is clear that ad hoc approaches alone are unlikely to be considered legitimate or likely to be effective in the short or the long term unless they are linked to the treaty-based regime. Similarly, treaty-based regimes by themselves, despite their solid legal credentials, are unlikely to

be effective in their objectives unless they are non-discriminatory and universal as well as having a strong enforcement mechanism. Therefore, this thesis is bridging the differences of realists and liberal institutionalists to find a middle ground (Sidhu, 2014).

3.1.Regimes, institutions and agreements

Regimes can be defined as principles, norms, rules and decision-making procedures around which actor expectations converge in a given issue-area (Krasner, 1982). Regimes can be understood as something more than temporary arrangements that change with every shift in power or interests. International institutions and regimes are important in the world of politics. They are important as they facilitate cooperation and international cooperation is indeed of great importance. It is clear that cooperation is not always benign but without it we would be lost (Keohane, 1988). Agreements are influenced by many factors, particularly by the perceptions that leaders of governments have about their interests in agreements or non-agreements. These perceptions will also be influenced by domestic politics, ideology and other factors. There are three different conditions that are of value in facilitating agreements among states namely the lack of a clear legal framework establishing liability for actions, information imperfections and positive transaction costs. These conditions are actually met all of the time due to the fact that there is no world government, information is very costly and often impossible to obtain and transaction costs are often extremely high. International regimes can therefore improve actors' ability to make mutually beneficial agreements. Both international regimes and international agreements are not created spontaneously. There must be a potential profit to organize such a collaboration. Governments expect to gain more from the regime than it invests in organizing it (Keohane, 1982). Institutionalism is to a certain extent a compilation of concepts from both rationalist and reflectivist arguments (Weber, 1997).

When it comes to security, regimes need to be applied differently due to the fact that it is more complex. The fact that neither superpower attacks the other is a form of cooperation and not a regime. Politics of security is different than politics of trade or international cooperation. Unrestrained competition is a frequent problem that can harm all the actors. The model of the prisoner's dilemma obviously shows that the option with the most self-interest does not lead to a pareto-optimal solution. Therefore, rules and institutions are necessary to control the competition among them. These regimes establish incentives and obstacles because of the security dilemma due to the fact that these policies that increase the security of state automatically decreases the security of another state. Therefore, security regimes are especially valuable but difficult to achieve. There are four main differences in regards to regimes in non-security areas. The first difference is that security issues involve greater competitiveness than in economic issues. Even if there is a free rider in an economic regime for example, it does not lead to the fact that if one state is better off others are automatically worse off. The second difference is that if a state may seek arms that threaten others it is not only costly but also harming others in the security area. The third difference is that small errors can already have big consequences and can cause permanent harm. Fourth, it is very hard to measure its own security due to the fact that military laboratories are not really transparent. Tariffs or illegal activities in case of trade might be way easier. Even if it might not always be entirely clear, it is still clearer than in military activities. However, security regimes, with the call for mutual restraint and limitations are not attractive for most decision makers (Jervis, 1982).

3.2.Conditions for a security regime

There are several conditions that need to be fulfilled in order to have a security regime. First of all, the great powers must want to have a security regime and they have to prefer a more regulated

environment instead of all states behave individualistically. Secondly, actors have to believe that others share the same value they place on mutual security and cooperation. So, in reality it is already enough that one major power is perceived as an aggressor to not have a regime. Third, when one or more actors believe that security is best provided by expansion then security regimes cannot be formed. The fourth reason is that if one state believes that war is a good then there will not be a security regime. Building arms cannot be a positive good due to the fact that security must be seen as costly. Decreased cooperation must be viewed as a cost due to the fact it is important to have a valuable cooperation (Jervis, 1982). From a realist perspective, cooperation does occur. However, realists think that it is difficult to achieve and even more difficult to sustain. There are two factors that limit cooperation from a realist perspective namely relative gains considerations and the concerns about cheating. Their form of cooperation needs to address the issues of how the profits or gains will be distributed. Either in terms of absolute gains where each side focuses on maximizing its own profit and does not care about the other side or relative gains where you consider your own gain but also compare it with the other side (Mearsheimer, 1995).

3.3.Example – The Concert of Europe

The Concert of Europe can be seen as a good example for a security regime from 1815 to 1823. During the Concert of Europe, the major powers did not seek to maximize their own power positions and they did not take advantage of others' weaknesses due to the fact that the regime regulated these attempts for all participants. Of course, there was still conflict but the Concert did regulate it. Back then, a new legitimate order that was accepted by all major powers was necessary. Cooperation in this aspect was important as one power cannot achieve all wishes namely absolute security where there is no foreign danger. This would mean absolute insecurity for all other powers (Kissinger, 1957). What is also important to mention is that the regime influenced the states'

behavior. Also, back then, the actors were not completely satisfied with the Concert but still all actors knew that it was better than no cooperation. Furthermore, the regime developed a limited degree of institutionalization. When the concert ended some states felt aggrieved and thought it was paying more than others (Jervis, 1982). The norm of reciprocity is therefore also strengthening regimes itself.

3.4. Balance of power

The question is whether balance of power is also a regime or not? Some scholars argue that each actor in the balance of power tries to maximize his power but fails because of similar efforts of others (Jervis, 1982). Realists are concerned about the balance of power and they are motivated primarily by relative gains (Mearsheimer, 1995). The international settlement appears to be somewhat unbalanced due to the fact that when one power is totally satisfied, all other powers would be totally dissatisfied. Therefore, a stable order is the relative security and relative insecurity as Henry Kissinger explains it in his analysis (Kissinger, 1957). A perfect balance is impossible in the international order even though when it could be constructed by a mathematical axiom. It is impossible and difficult not only because of the prediction of the aggressor (Kissinger, 1957).

As described in this chapter, there are different approaches by liberal institutionalists and realists to achieve non-proliferation. Every aspect comes with certain challenges as further described with the ideas of security regimes and norms for non-proliferation. In order to further support the assumptions, the author has chosen several case studies as explained in the next chapter.

4. METHODOLOGY

This chapter is concentrating on the method used for this thesis. In addition, the author describes the main approach of case studies and the comparative case study analysis method.

The goal of this analysis is to identify domestic factors that foster support for nuclear non-proliferation and disarmament deals. This kind of analysis requires in-depth knowledge of the contexts and domestic developments in countries selected for analysis. Qualitative research methods lend themselves particularly well. In this chapter, the author is describing the approach of the qualitative analysis, which is building on the theoretical background of scholars described in the previous chapters. The qualitative approach is done by examining the cases of Iran, South Africa and Ukraine in order to provide a detailed explanation of their motivations and conditions. Qualitative methods are used as it allows the author to broadly collect data within this field and analyze the data non-numeric (Lamont, 2015). On the following pages, the author explains case study analysis in general, the method of analysis and the comparative case study method. This chapter builds on the theoretical foundation described in the previous chapters.

4.1.Case studies

Case studies as a research strategy are widely used for questions that start with “how” or “why” and is one of the most challenging methods. They are used widely in sociology, political science, psychology and even in economics in order to understand complex situations in our society and give researchers the chance to analyze complete characteristics of current events (Yin, 2009). One concept of case studies is the comparative method as a strategy for research. There are two different ways suggested by John Stuart Mill, Mill’s Methods of Comparison namely the method of agreement and the method of difference. A most different system is when cases have different explanatory variables but similar on the dependent variable whereas the most similar system are

similar on the explanatory variables but are different on the dependent variable (Levy, 2008). This means that most similar systems have different outcomes and most different systems have similar outcomes (Esser & Vliegenthart, 2017). Charles Ragin describes this approach as a holistic comparative method where each case is a complex entity and includes a case-based interpretation for each case (Ragin, 1987).

In general, to start a case study analysis the author had to select cases around the dependent variable in order to explore the research question. The cases are used as units of comparison for the dependent variable. After listing all potential cases, the author has chosen several cases with similar outcomes to see if specific independent variables play similar roles within the cases. The author has carefully and systematically compared the information and data of each case. The parameters of each case concentrate on the time frame during their disarmament and non-proliferation (Roselle & Spray, 2008). The method of case studies is used in order to examine the aspects of each case to develop explanations to other events. It is used to generate knowledge in order to draw conclusions for other cases. With the research question the author is using empirical hypothesis testing as to understand the domestic conditions of the states under which they will comply with a nuclear agreement. As there are not many cases that are appropriate for the analysis, the author designed a comparative case study that will allow an insight into each case study (Lamont, 2015).

4.2.Method of Analysis

This comparative historical analysis is the most appropriate way to develop explanations of nuclear crisis until denuclearization that are at once historically grounded and generalizable beyond unique cases. In order to facilitate the analysis of these methodological alternatives the author uses international relations theories to find out important characteristics. The theories used for this

paper are the main international relation theories namely liberal institutionalism and realism because they are broadly formulated with conceptual schemes and hypotheses meant to be applicable across these historical instances. The author is analyzing case by case in depth in order to understand and explain generalizable logics of each case. The goal of the author is to provide evidence of the connection between multilateral treaty-based agreements and non-proliferation of nuclear weapons.

4.3.Case selection

This thesis does not analyze in depth all available cases of nuclear states and crisis. Nor does it analyze a random sample from the entire universe of possible cases. In fact, comparative case study analysis works best when applied to a set of a few cases that share certain basic features (Skocpol, 2015). In the following chapters, the cases of Iran, South Africa and Ukraine are treated together as similar examples of a successful denuclearization case. There are some important practical reasons why these cases where chosen for this analysis.

The cases used to develop the research are the JCPOA with Iran and the denuclearization programs of South Africa and Ukraine. The main source of this research is empirical data. Secondary data is also analyzed namely historical works, UN reports, reports from various think tanks and governments. In addition, several articles, conventions and treaties are used. Governmental documents are also used for this thesis to find out the countries' main motivations.

The case selection criteria are drawn from Mill's Method of Agreement and Method of Difference. As the author wants to research on cases that share the same dependent variable the method of least-similar case comparison is used. Least-similar case comparison method are including countries from culturally distinct regions (Lamont, 2015).

4.4.Data and data-collection

The author is heavily relying on websites to find data. Websites are rich sources of updated information, analyses and official documents. Original documents, reports and scholarly journal articles are used for the analysis. The main websites used are governmental websites, such as the homepages of states, inter-governmental websites namely relevant for information regarding international organizations, and non-governmental websites such as the homepages of think tanks for example. In order to maximize the quality of the data, the author is checking the reliability of the websites prior to using them as data sources. Using data from not only governments but also non-governmental is giving the author the chance to overcome bias. The author is also using a triangulation of methods by using multiple data sources in the qualitative research method in order to check reliability and validity of information gathered from different sources. Therefore, the author uses different sources to gain multiple perspectives and make sure the data is valid.

In order to test the hypothesis and answer the research question the author is analyzing international norms, frameworks and domestic motivations. The above-mentioned sources are used to gather this information.

The author is analyzing on the differences between Iran, South Africa, Ukraine and North Korea to understand all issues. Furthermore, the author is working on the preconditions for Iran, South Africa and Ukraine in order to find out whether this would be a model for North Korea too. In addition, the author is focusing on how this would look in practice and the role of several states.

The North Korean, Iranian, Ukrainian and South African challenges distinct in many ways, converge on the key role played in these cases by broader security environments. The end of the Cold War illustrates how the role of wider security conditions in these critical cases has

inaugurated a second nuclear era in which the pursuit of nuclear weapons in global politics is significantly reshaped. With this thesis, the author is producing an analysis of all cases mentioned above in order to give policy recommendations for North Korea.

There are several approaches in discussions regarding North Korea. The moderate school favors dialogue as the primary means of solution and the hardline school favors sanctions (Gyeong-seob, 2010). The outcome of this thesis is going to rely on the moderate believe that North Korea's nuclear development is essentially for negotiations purposes to achieve its survival. However, until now the moderate school has failed to offer practical ways for a coalition and therefore this thesis is going to offer recommendations to achieve that. Sanctions proved to create serious political backlash, even though it might be necessary in some ways (Moon, 2015). Mr. Trump said in Seoul that he believes that it makes sense for North Korea to come to the table and to make a deal that's good for the people of North Korea and the people of the world (Rogin, 2017).

Machiavelli is saying: "*Thinking of the march of human affairs, I am of the opinion that the world remains in the same state as it always was, that there is always the same sum of good, the same sum of evil, but that this good and evil only shift through various places and countries* (Machiavelli, 1532)." It is therefore of the utmost importance and relevance that Western strategists and military thinkers continue to think and plan realistically about nuclear deterrence and how to make it more effective and more credible in the future. Planning is the most important price to pay for preventing war and therefore the outcome of this study should offer a new perspective on how we could proceed with the issue regarding North Korea (Debouzy, 2012).

4.5.Comparative case study analysis

In order to produce an analysis for North Korea and give recommendations in regards to the current challenges for North Korea, the author is using the comparative case study method. Below, the author explains the main technique and how it is used mainly relying on Charles Ragin and Robert Yin. The comparative case-based research method focuses on two or more cases (Roselle & Spray, 2008).

The method of a comparative analysis is widely used in studies of large-scale social change and at the level of countries, nations, societies or the study of institutions in more than one society. Usually comparisons are made between two or more countries or also countries compared to a model to interpret social phenomena. The technique can be used as quantitative and qualitative. In this thesis, the method is used as a qualitative approach where certain variables are tested theoretically derived from the hypotheses. The information is gathered from the case studies (Yin, 2009).

Charles Ragin points out that comparison is important in scientific research in particular in empirical social research. Many other authors stress the point that the comparative method sharpens the power of description by bringing into focus suggestive similarities and contrasts among cases. The comparison is used to test the hypotheses and also to build new theories. For this thesis only a few cases are analyzed to study the political phenomena and different regimes are conceptualized. A great number of scholars in international relations believe that political phenomena is best understood when a small number of cases are carefully examined. As Robert Yin explains this method he stresses the point that case studies allow scholars to have a holistic and meaningful understanding of certain cycles, processes, international relations and change (Collier, 1993).

Comparative case study analysis compares cases as wholes and also tend to be interpretive, which can be compared to empirical social science. This kind of analysis seeks to make sense of different cases. Comparative research can be defined as the comparison of at least two different societies or countries. This also includes the similarities and differences among the cases. Ragin also argues that this method is mainly used to study specific historical outcomes and similar cases are used when explanations are difficult to prove in a quantitative way. Furthermore, the comparative method does not work with samples or populations but rather with all relevant cases. The author therefore studies each case in detail and compares all cases with each other. As each case is very complex it is important to find the similarities and differences across the cases. Therefore, the author is using only characteristics that can be assessed in each case (Ragin, 1987).

4.6.Operationalization of variables

The author is operationalizing all variables in order to give the reader a common understanding of what is being studied. All variables are being measured and assessed as either present or absent. Therefore, the main definition can be found below.

Domestic regime transitions are defined as a new leadership and reforms before negotiations started for non-proliferation and disarmament deals or agreements. High cost of nuclear program is defined as states have stated it in their official statements as their reason for disarmament. However, there are no clear numbers available for each case concerning the exact amount of costs. International sanctions are defined as economic decisions by countries towards another country. Regional stability can be defined as crisis and conflicts in neighboring countries that ended and the region stabilized through the end of the conflicts. Therefore, threat perceptions changed after the conflict ended in neighboring countries or within the region. As far as international pressure to sign the NPT is concerned, it can be defined as countries pushing non-members of the NPT to join

the NPT. Independence can be defined as other states have no control over nuclear installations and territory. Operational difficulties can be defined as in terms of challenges in nuclear modernization and research and development. Economic hardship can be defined as economic difficulties because of international sanctions and isolation that were shrinking the economy. As far as nuclear accidents are concerned it can be defined as nuclear accidents occurring during a test. The limit of the nuclear power potential of one state can be defined as either agreeing to a non-proliferation deal or disarmament of nuclear weapons.

As described above, case studies have been selected in order to test the hypotheses. The comparative case study method is used for drawing a conclusion for the case of North Korea. In the next chapter, the author describes the first case study in detail.

5. NORTH KOREA

In the previous chapter, the author shows an explanation on the method that is used namely the comparative case study analysis method. In this chapter, the author examines the first case study of this thesis, which is North Korea in order to provide answers to the research question and also to test the hypotheses.

5.1.Introduction

In order to better understand North Korea's nuclear weapons program, one needs to consider the whole progress of Pyongyang in developing nuclear weapons.

In the past two decades, North Korea has made significant advances in developing a nuclear weapons arsenal. The country has detonated six nuclear devices. One of them with a yield of a couple hundred kilotons and a range to reach the United States and Europe. Officials of the US, agencies, military commanders and non-governmental experts are struggling to assess the capabilities of the North Koran nuclear program. Based on the information that is available it is estimated that North Korea has sufficient fissile material to build around 30 to 60 nuclear weapons (Kristensen & Norris, 2018, 2018).

5.2.North Korea's ballistic missiles

There are different categories of ballistic missiles and North Korea has a missile force of all of them. The countries' close-range ballistic missiles, short-range ballistic missiles, and two of its three medium-range ballistic missiles are operational. One intermediate-range ballistic missile is close to operational status and one intercontinental ballistic missile (ICBM) has limited operational capability. Some ballistic missile types of North Korea might have been tested for research projects

in order to develop technology and not necessarily for operational deployment (Kristensen & Norris, 2018).

5.3. Agreed Framework 1994

North Korea even began to develop nuclear weapons before the formal collapse of the Agreed Framework. This framework of 1994 was an agreement whereby the United States would provide two proliferation-resistant nuclear power reactors and North Korea would freeze operations at reactors thought to be part of a nuclear weapons program (Kristensen & Norris, 2018). However, in 2004, Pakistan's Abdul Qadeer Khan said that he was shown three plutonium devices in 1999. The visit to the underground facility was about one hour outside of Pyongyang (Sanger, 2004). The US Secretary of State Colin Powell stated three years later that it is assumed that North Korea has a couple of nuclear weapons and have had them for years (US-State Department, 2002). In 2005, North Korea declared itself that they have manufactured nuclear weapons for self-defense and that these weapons will remain a nuclear deterrent for self-defense under any circumstances (The Washington Post, 2005).

5.4. Position of North Korea

The United Nations, the EU and the US have imposed sanctions against North Korea that include an embargo on exports and imports of arms of North Korea. Furthermore, also other restrictions are in force namely on the supply of conventional weapons and certain weapons of mass destruction, technology, technical assistance and sensitive goods. The United States also imposed other sanctions against North Korea after the cyber-attack against Sony Pictures Entertainment so certain entities and persons are blocked. Furthermore, on the 20th September 2017, the US gave the order to the US Treasury Department to sanction foreign banks whenever they engage with

North Korea and also sanctions against other business operations for parties that undertake business with North Korea (FATF, 2018).

North Korea is also rated as highly corruptive. With the Transparency International Corruption Index the country was rated with only 17 points, whereas 100 is the highest amount achievable.

As far as the economy is concerned, North Korea is estimated to be one of the least open economies in the world and also most centrally directed. There has been high military spending that would have been needed for investment and civilian consumption. Weather conditions led to chronic food shortages and further systemic problems as for example poor soil quality, limiting fertilization and shortages of fuel are creating big issues for the country. During the 1990s the country was marked with widespread starvation and ever since food assistance from outside has declined. Rice and corn production in North Korea have been better in the last years however, the demand is not satisfied. A large number of the population is suffering poor living conditions. The government of the country wants to improve the situation of the overall standard of living but there are almost no steps that would achieve this. Currently the country has in total 25 economic development zones. The main export partner is China with 75.8%. Importing partners are China with 76.4% and the Republic of the Congo with 5.5% (ibid).

Negotiations with Pyongyang seem to be very difficult. Scholars have different opinions of what North Korea needs. A strong point is that North Korea wants a reorganization of power of the region where also the US and China have to agree. The strategy of their regime has been remarkably successful so far. The Kim family dynasty is still in power and negotiations with the country seem to be no solution due to the fact that the country does not comply with the rules of international treaties and other agreements. China and the US tried to change the regime in different ways through economic reforms, “strategic patience” or sanctions. However, Beijing still

continues to provide financial aid to North Korea so tensions on its boarders are regulated (Maull, 2017). The first approaching steps were between South and North Korea during the New Year's speech of Kim Jong-Un on the 1st of January 2018 (Ballbach, 2018).

During the last two decades, North Korea has developed a nuclear weapons arsenal and has six nuclear devices. History shows that economic pressure does not change a regime or a society. The tendency goes more to the fact that it facilitates strong leaders. Sanctions make states subject to more authoritarian regimes. Furthermore, sanctions had a great impact on human rights in the states on which they are imposed and these countries also grew less democratic (Beinart, 2018). North Korea decided to have nuclear weapons a long time ago. The leaders of the state also pointed out several times that they would not trade away their nuclear arsenal for diplomatic or economic guarantees (Fitzpatrick, 2014).

William Perry, former Secretary of Defense, held a lecture in Moscow on the topic "The Russian-US Relations, Nuclear Threat Reduction and Global Security" which was organized by the Center for Global Trends and International Organizations at the Institute of Contemporary International Studies of the Diplomatic Academy of Russian MFA, in cooperation with PIR Center and the Nuclear Threat Initiative. During his presentation, he pointed out that diplomacy is very important when it comes to the issue with North Korea. However, he stresses on the point that with diplomacy alone one cannot solve the crisis. Dr. Perry gave several recommendations on how to deal with North Korea. He suggested that the US, Russia, South Korea, Japan and China would have to work closer together to lower the danger through diplomacy (Perry, 2018).

5.5.Security Issues

Various think tanks and research institutes try to understand the situation on the Korean peninsula. RUSI (Royal United Services Institute) for example focused on North Korean proliferation and the nuclear policy program during the last months. Scholars suggest that policy makers should concentrate rather on small gains than grand bargains. In addition, sustained diplomatic processes might offer the opportunity to establish channels of communication. A solution could be developing engagement between North and South Korea and also between US and Japan so the four parties can benefit from summits of policymakers. Experts argue to advance diplomatic process but at the same time protect key alliances. The five key topics that should be addressed during a diplomatic process are the varying priorities between South Korea and Japan, the role of the leader Kim Jong-Un, the future of the nuclear program of North Korea, the crossing timelines of all parties and different perceptions of the security issues in the diplomatic process. All involved, parties have different perceptions so it is important that the current approaches are clear between the states. Many offers towards North Korea on the Korean peninsula include food aid and economic concessions. However, the development of the nuclear weapons of North Korea should be addressed in first place. Japan fears that too many security concessions are granted to North Korea without being clear on North Korea's nuclear and missile programs. However, to date Japan did not directly engage with North Korea on these issues. The differences between Seoul and Tokyo still remain. Japan is concerned about North Korea's intercontinental ballistic missiles whereas Seoul is more concerned about North Korea's long-range artillery. In the case of North Korea, the parties Japan and China have different positions. In regards to the leader Kim Jong-Un, Beijing, Tokyo and Seoul recognize clear differences between him and his father. These three parties also think that Kim Jong-Un is smarter and more flexible and rather focused on the

economy than security issues. However, the personality of Kim Jong-Un is based on observations of his public appearances. Furthermore, there is almost no insight into internal regime dynamics. All major actors however, believe that North Korea is probably likely to keep some nuclear and missile capabilities. A clear picture of how this would look like within an agreement is not given due to the fact of North Korea's transparency issues. A first step would be a complete declaration of North Korea's nuclear capabilities and their program. However, it is unlikely that North Korea is going to declare their nuclear program. Therefore, this could lead to a collapse in the diplomatic process and a loss of trust. The target could be that North Korea should declare their program as complete as possible and update it over time. During the Six-Party Talks, North Korea declared the size of fissile material stockpiles but did not include the locations (Plant & Varriale, 2018).

5.6. Time pressure

As far as the North Korean crisis is concerned there are political time pressures to be considered. Donald Trump is going to face re-election in 2020 and the South Korean leader Moon Jae-In is going to leave office in 2022. Only Kim Jong-Un and Xi Jinping are leading for a longer time. In addition, Kim Jong-Un might also want to seek a deal with Trump than with another administration. Therefore, the US mentioned many times that a deal must be done by January 2021. For the next meeting between Kim Jong-Un and Donald Trump it would be important to have a meaningful dialogue and talk about limiting nuclear risks. Furthermore, the US should focus on restricting future expansion of North Korea's nuclear program. Only focusing on removing North Korea's nuclear weapons without knowing the scope of the program that produced those, is very critical (Plant & Varriale, 2018).

5.7.Sanctions against North Korea

The United Nation's sanctions against North Korea is one the major tools of the international community to address the issue with the nuclear and missile programs of North Korea. It is one the most complex sanctions regime of the UN ever planned. However, the sanctions regime towards North Korea are losing legitimacy and are more and more accused to not be working to get North Korea back on the table for negotiations. North Korea even accelerated research and development on new types and vehicles and also on nuclear testing. Furthermore, the international community does not implement the same regime on North Korea. Therefore, many gaps and different political interests are creating a crisis in that sense. China for example is the major trading partner for North Korea which makes it possible to evade sanctions. When North Korea intended to produce plutonium for a weapon, the US and its allies first started to reflect about sanctions on North Korea in 1993. However, negotiations of the Agreed Framework did not lead to sanctions but restrictions on North Korea's nuclear program. In exchange, North Korea received aid and nuclear cooperation. After the first nuclear test in 2006, the UN Security Council saw that North Korea is a threat to the international security and Resolution 1718 (2006) that included the first sanction regime on North Korea. Back then, the scope was rather narrow and included individuals and a list of entities that are involved in the proliferation program of North Korea. Assets were frozen, travel bans were imposed and also introduced a trade embargo on goods in relation to weapons of mass destruction and luxury goods. After North Korea's fourth test in 2016, more countries joined the US to accelerate the UN sanctions framework. In September 2016, North Korea started its fifth nuclear test. It took three months to agree on the Resolution 2321 (2016) that included new restrictions that stemmed the revenue streams of the regime of Kim Jong-Un. The sanctions regime is very complex including a great number of sectors. Those include sanctions on

luxury goods, arms embargo, sectoral sanctions mainly on coal and iron, shipping and cargo sanctions, financial restrictions and diplomatic restrictions. The growth of the sanctions regime on North Korea started in the early 2016. However, more questions are arising whether these sanctions are effective due to the fact that there are many gaps that North Korea is using. The UN sanctions regime need to address those issues and have to recognize that China is not the only state giving North Korea the chance to evade the regime. Many traders exist in Africa, Southeast Asia and the Middle East. In addition, North Korea controls bank accounts worldwide for illicit financing. Many countries are still buying military goods from North Korea (Berger, 2017).

Sanctions seem to be a common tool used to respond to security and peace threats. However, states do have different approaches and therefore, can have an impact on the effectiveness of the sanctions that are imposed on a specific country. An important role is definitely the private sector that should be part of the negotiations too in order they can adapt to the sanctions regime due to the fact that they become more complex for the private sector to implement. That can be costly for them to ensure compliance with the complex sanction regime (Keatinge, Dall, Tabrizi, & Lain, 2017).

As mentioned in this chapter, North Korea is in a very critical position. There have been negotiations with North Korea in the past, however, it seems that the country is not afraid to break the rules and norms of the international community. Even though North Korea is facing strict sanctions, their effectiveness is questionable. Therefore, the author tries to improve the knowledge on how to limit their nuclear power potential by using further case studies and investigate on further variables of other countries.

6. IRAN

The next case study in this thesis is Iran as it has been a very unique case when it comes to nuclear non-proliferation deals. In order to study Iran's domestic conditions, the author starts with a short historical explanation and the various steps until the finalization of the JCPOA.

6.1.Nuclear Crisis and the MKO

The Mujahedin e Khalq Organization (MKO or MEK) emerged in 1953, and was formed by a group of people that tried to fight against politics of the Shah of Iran. The organization was officially founded in 1965 by a group of students that studied at the Tehran University (ACCORD, 2018). The philosophy is linked to the revolutionary thinking and is trying to bring Marxism and Islam closer together. Furthermore, the group tried to work against the Shah Mohammad Reza Pahlavi, who was the last royal leader in Iran. The opposition group was striving for a regime change in Iran and conducted various attacks in the 1970s and 1980s in Iran against the government of the Shah and also his American allies. International think tanks and foreign policy magazines also argue that the MKO was part of the hostage-taking at the US embassy in Tehran in 1979. The organization also interpreted the Quran as an own version. It is estimated that the MKO had around a million supporters during the 1980s in Tehran and the leaders created the National Council of Resistance (NCRI). The MKO is the main organization within NCRI and acts as a parliament-in-exile. The main actions are carried out from Paris under the leadership of Maryam Rajavi. The main objectives of the organization were press without censorship, freedom of speech, improve women's rights and free market economy. During the eight-year Iran-Iraq War, the MKO aligned with Iraq and therefore the tensions with Iran worsened. Furthermore, during the 1990s the MKO attacked the US and Europe several times, which led to the declaration of a terrorist organization on their official lists. In 2002, the NCRI leaked information regarding the Iranian nuclear program.

Therefore, the NCRI could win a lot of support of the US by the disclosure of this information (Garduño, 2014).

During the 1980s and 1990s, the MKO posed a different threat than today. Especially in 2002, the political branch of the MKO, the NCRI was a key threat to the Iranian state due to the fact that they provided information about two undeclared nuclear facilities namely the enrichment facility in Natanz and the Heavy Water Reactor in Arak. The NCRI held press conferences in the US in 2002 and 2003, that revealed information regarding the nuclear program of Iran. George W. Bush pointed out that the information was uncovered by a rebel group but still supported it due to the fact that both groups wanted a regime change in Iran. In May 2002, the EU listed MKO as a terrorist organization and in August 2002, the NCRI held the first conference. The MKO claimed responsibility for more than 300 attacks only in 2000 and 2001. Over 17,000 Iranians including children and women were held as victims of terrorist acts by MEK. The documentary book including all names and specification of the victims was officially delivered to the United Nations (Soltanieh, 2018). Even though the organization gained support of the US, since 2003, their capabilities decreased due to the Iraq War as Saddam Hussein was removed from power. For procedural reasons the MKO was removed from the terrorist list by the EU (2009), US (2012), UK (2008) and Canada (2012) (Goulka, Hansell, Wilke, & Larson, 2009).

One also has to note that the information released by MEK in Washington was not held in secret by Iran due to the fact that the Natanz enrichment plant was open under construction for a couple of years. It was clearly visible by people passing by or living in the vicinity. This is also true for the Arak heavy water reactor plant. Furthermore, it is also important to mention that Iran had no obligation to report to the IAEA until 180 days before nuclear material are introduced in these facilities according to the code 3.1 of the subsidiary arrangement of the IAEA safeguards

agreement. Therefore, Iran was not obliged to declare those facilities by 2003. After the JCPOA, however, the Islamic Republic of Iran has accepted to implement the modified code 3.1 of the subsidiary arrangement. Therefore, Iran shall inform the IAEA about any new nuclear facilities from the beginning of the project, not necessarily waiting 180 days before introducing nuclear material (Soltanieh, 2018).

6.2.Iran and EU3 in 2003

After the leak in 2002, by the National Council of Resistance of Iran (NCRI), the United States accused Iran for pursuing nuclear weapons. The Iranians denied this information and agreed to inspections by the IAEA. Therefore, the IAEA undertook investigations and inspections in February 2003. The IAEA Director General Mohammed ElBaradei stated after the visits in Iran that "*Iran has failed to meet its obligations under its Safeguards Agreement with respect to the reporting of nuclear material, the subsequent processing and use of that material and the declaration of facilities where the material was stored and processed* (ElBaradei, 2003)." In addition, the report points out that Iran does not have the quantity of nuclear material that is needed for a nuclear explosive device. The IAEA recommended to conclude an Additional Protocol so the inspection rights can be improved. International pressure increased and therefore, Iran agreed to surprise IAEA inspections and suspend uranium enrichment. Following, reports say that there was no evidence that the undeclared nuclear material was related to a nuclear weapons program. Iran then signed the NPT Additional Protocol in the end of 2003, in order to have a resolution for the nuclear crisis. The IAEA and the United States still put pressure on Iran and criticized the country for doing too little regarding the suspension of uranium enrichment. Iran agreed to freeze all uranium enrichment and reprocessing activities during the EU3 (UK, France and Germany) talks (Shahshahani, 2008).

The negotiations in 2003 resulted to the agreement that Iran suspended all of its enrichment activities and applied the Additional Protocol (Soltanieh, 2018). However, Iran was under no legal obligation to suspend uranium enrichment due to the fact that states have the right to peaceful nuclear energy as also stated in article 4 (1) of the NPT saying that "*nothing in this Treaty shall be interpreted as affecting the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with Articles I and II of this Treaty* (Treaty on the Non-Proliferation of Nuclear Weapons, 1968)."

6.3. The Iran Deal (JCPOA)

In order to prevent Iran from getting the bomb and preventing it from getting bombed Iran and the P5+1 (China, France, Russia, the United Kingdom, and the United States; plus Germany) worked on a deal called JCPOA (Joint Comprehensive Plan of Action). Back then, the Israeli Prime Minister Benjamin Netanyahu called the deal a "historic mistake" and that it would also pave the way for Iran to obtain a bomb. However, three years after the deal has been signed, Iran is still not the hegemon in the Middle East and Israel is still on the map. When examining the deal closer, one can say that it has had a profound impact on the region's geopolitical dynamics. Furthermore, the Iranian nuclear program was referred to as the United States' number one national security threat (Parsi, 2016).

On the 8th of May, 2018, US President Donald Trump withdrew the United States from the JCPOA. Trump is calling the JCPOA a horrible and one-sided deal. In response to the withdrawal of Trump, the Iranian President Hassan Rouhani announced to remain committed to the terms of the deal while negotiating with the other parties to the deal namely Russia, China, France, Germany, the United Kingdom and the European Union. In case it is not possible to find a solution that

safeguards the economic benefits, Iran would start enriching uranium again. The Iranian Supreme Leader Ayatollah Ali Khamenei has expressed that Iran will not stick to the nuclear agreement without receiving a strong guarantee from the three European countries (Mousavian, 2018).

The trade between Europe and Iran has nearly doubled in the past year. Therefore, keeping the deal together is in interest of both of them. However, there is also a political reason to protect the deal as German officials stated that only 0.22 percent of almost one trillion euros of German exports go to Iran. Therefore, the only motive behind the support for the JCPOA is not for economic reasons. It would definitely result in higher tensions, unleash Iran's nuclear program and call into doubt the reliability of multilateral agreements. Another way of a strong signal of commitment to the JCPOA would be a new negotiation between Europe and Iran in order to reach a new agreement. This could be a long-term energy partnership or a bilateral investment agreement. Iran's outdated banking standards and the opacity of their economy, a public European body, as for example the European Bank for Reconstruction and Development (EBRD) could help small to medium sized firms conduct due diligence in Iran. This could be a great support for Iranian corporations as setting up all due diligence obligations can be very costly and also to ensure that local partners are not targeted by the remaining EU or UN sanctions. The EBRD already played a similar role in Eastern Europe after the Soviet Union's dissolution and supported private sectors to develop through market liberalizations, creation of legal frameworks and banking system reforms. However, the EU is still considering whether to allow Iran to become a European Investment Bank (EIB) partner, which would give Iran access to receive development-related loans from the EU. The United States has a market of 19 trillion US dollars and Iran has a market of 400 billion US dollars. Therefore, an important question is whether European banks and companies would take the risk of doing business with Iran. Only Trump's decertification of the nuclear deal,

which had no immediate practical consequences led multinational companies to delay plans to enter the Iranian market (Vaez, 2018).

Negotiations regarding verification measures started already in 2003, between Iran and the IAEA, besides the routine verifications to other countries. In addition, parallel negotiations started between Iran and the EU3 and later EU3 + 3 (P5 + 1) (Soltanieh, 2018).

The Foreign Minister of Austria Karin Kneissl addressed the UN General Assembly in New York on the 29th of September, 2018. The Minister called for confidence in international justice to be restored and defended the nuclear agreement with Iran (JCPOA). The plan negotiated in Vienna was politically binding. It was the result of an effective multinational action and created the prerequisite for mutual trust at international level. In the end, recognition of international agreements would also guarantee international security. If only one single country acted on its own authority without coordination with all other partners, mutual trust would be disturbed (Der Standard, 2018).

6.4. US withdrawal from JCPOA

The United States left the international nuclear agreement and is now trying to pressure Iran economically. The US has imposed harsh economic sanctions and this is also concerning European companies. American companies have not been active in regards to business with Iran. Big deals between European companies and Iran are abandoned as many CEOs of companies follow politics. This has also been the case for example with the big German technology group Siemens (Buchen, 2018).

Even though the United States left the deal, the European Union argues to remain fully committed to the nuclear deal. The High Representative for Foreign Affairs and Security Policy of the EU,

Federica Mogherini, claimed that refusing the deal is not in the interest of anyone. Furthermore, she conveyed this message as the United States entered into direct talks with North Korea regarding denuclearization. As far as the standpoint of the EU regarding the Iran deal is concerned, it seems that the EU is staying united on these issues. In order the deal survives without the United States, other members of the JCPOA need to win Tehran's trust. Therefore, the European Union needs to have full commitment by Russia, China and other signatories so Iran can still benefit from the deal, even though the US left (Blockmans, 2018).

The JCPOA was considered to have a great impact on strengthening the NPT. Furthermore, the IAEA safeguards verified twelve times that Iran is in compliance with all obligations and had to undergo the strictest safeguards regime that was applied to a NPT party. The withdrawal of the US was definitely a violation of the agreement. Furthermore, as the US reintroduced sanctions and also threats against countries that cooperate with Iran in order to fulfill their commitments under the JCPOA, can be a serious threat for the agreement itself, the non-proliferation regime and also for the NPT Review Conference in 2020.

Iran had to suspend all enrichment related activities and also apply the Additional Protocol in return that the EU will cooperate more with Iran. Until today, even though the US withdrew, the EU supports the JCPOA and strongly tries to continue to cooperate with Iran. However, measures need to be taken against the US sanctions and threats towards European countries (Soltanieh, 2018).

The IAEA states that since 2013 their inspection work has almost doubled. More than 3,000 calendar days were spent on the ground of Iran and hundreds of thousands of images that are captured daily are analyzed (Amano, 2018).

In this chapter, the author explained the position of Iran and the processes of the JCPOA. This case study showed that Iran had unique conditions in order to reach an agreement for the non-proliferation of nuclear weapons. To further study different conditions of states, the next chapter is illustrating the next case study in detail.

7. SOUTH AFRICA

In this chapter the author is examining South Africa as another case study. As in the previous chapters of the case studies, the author is concentrating on the main domestic conditions that led to denuclearization.

South Africa showed interest in nuclear energy, acquiring nuclear reactors, training personnel and establishing international cooperation for peaceful purposes until the 1970s. This nuclear path changed in the 1970s until the 1990s towards investments in nuclear programs and research on uranium enrichment and fuel reprocessing. Their interest was to have access to all the possible uses of fissile material and therefore sustained critical positions and refused to sign the NPT (Carpes, 2013). There were several states that produced nuclear weapons but is the only one that dismantled the arsenal. The case of South Africa is very unique in terms of nuclear acquisition and disarmament. South Africa faced a lot of pressure due to the apartheid policy and states that are isolated often reach out to nuclear acquisition. Therefore, domestic politics drove South African to their nuclear weapons policies back then. Also, international sanctions and norms did correlate to the changes of their nuclear policy (Liberman, 2001).

7.1.History

South Africa's foreign policy is mostly driven by the country's past experiences in nuclear policy. Until today, South Africa is the only country to have ever developed nuclear weapons and later unilaterally dismantled them and joined the NPT. South Africa started to develop nuclear weapons when the Cold War reached the Southern Cone. Combined with apartheid ideologies their policy makers were seeking nuclear weapons as they already fostered the required capabilities. The nuclear program of South Africa was totally hidden and the National Party (NP) never confirmed the possession of nuclear weapons. This was part of the diplomatic strategy. Power projection,

prestige and autonomy were not the only motives to go nuclear. Also, a peculiar self-perception, domestic and regional instabilities, threat perception and advanced capabilities were important aspects (Carpes, 2013). The decision to have a nuclear weapon program was taken by 1974. However, clear evidence appeared only in 1977. This decision was also taken as the threat environment worsened during that time. First, the program was developed to have peaceful nuclear explosives (PNEs) application. Furthermore, the program was also secret in the very beginning. It was also clear for the South African leadership that the PNE program would also generate a nuclear weapons capability. South Africa faced several diplomatic and economic drawbacks of their PNEs program. In addition, it seemed that maintaining it so secret was because of the intended goal to have nuclear weapons. The first two nuclear devices were completed in 1978 and 1979 by the Atomic Energy Board (AEB) (Liberman, 2001).

South Africa's leaders viewed the country as a strategic ally of the US. However, South Africa is located among under developed nations and wanted to have all options available regarding their nuclear program. The status of their regional power and the ultranationalist discourse of the National Party justified their interest back then. Until the 1970s their nuclear program was for peaceful purposes. But growing regional instability was enough motivation to develop nuclear weapons. The civil war in Angola, the pro-Soviet regime in Mozambique and the independence of Namibia were combined factors that led South Africa to construct nuclear weapons. In case of changes to the regional balance of power South Africa predicted a partial disclosure of their nuclear weapons to the US and UK with the expectation that the West would intervene in the region on behalf of South Africa. However, this was never the case so South Africa sustained a politically ambiguous position. Furthermore, the decision makers of South Africa never had the intention to use the bombs due to the fear of retaliation (Carpes, 2013).

In the 1950s and 1960s South Africa gained scientific experience through international cooperation with Western country and also under the information exchange through Atoms for Peace and the Plowshares Peaceful Nuclear Explosions Program with the US. The country's good cooperation with the West gave them also the chance to train their scientists in Europe and the US. In the 1960s, South Africa engaged in research regarding uranium enrichment and this information was also released by the Prime Minister, John Voster in 1970. Back then, the intentions were still for peaceful purposes even though there were big ambiguities in regards to its use in the future. The regional threat increased in the 1970s and South Africa's program turned towards the development of nuclear weapons. The first years of the 1970s was concentrating on the development of the technical capabilities in order to compile nuclear weapons within a very short time frame. The relations to the US and later on also the UN and the IAEA did aggravate and in 1978, the leaders of South Africa decided to build nuclear weapons and in 1981, South Africa was a nuclear state. Non-proliferation and to sign the NPT was not the intention of South Africa's leaders due to the fact that the region was still unstable. South Africa possessed six bombs by 1988 but international pressure increased for South Africa also in regards to the accession to the NPT. South Africa's cutback started in the late 1980s and had several reasons (ibid).

7.2.Cutback of South Africa

The reasons of the cutback are all interconnected. When looking at the domestic level it seemed that the National Party needed to bear a regime transition, which was leading to reforms. There were many concerns that the African National Congress could have had access to the nuclear weapons program. Furthermore, US officials also shared these concerns. This was one of the dimensions that explains why South Africa dismantled their nuclear program. Another important dimension was relating to the high costs of the nuclear program. South Africa was also subject to

international sanctions that were shrinking the economy. Changes at the regional situation that was a concern many years earlier, was also a dimension that led to the reversing path. Soviet and Cuban troops withdrew from Southern Africa and the independence of Namibia changed the threat perceptions. Furthermore, there was great pressure from the US on South Africa to join the NPT and the demise of the USSR had an impact on the reversing path of South Africa. All these dimensions mentioned above led the policy makers of South Africa to decide to terminate the nuclear weapons program. By the time around 1990 to 1992, the program was dismantled entirely without international assistance. The plan of the dismantlement composed the uranium enrichment plant at Pelindaba, the six nuclear bombs, the nuclear weapons production facility and hardware and documents related to the program. South Africa then signed the NPT in July 1991, and in September 1991, the country signed a full-scope agreement with the IAEA. Therefore, South Africa's first steps started in 1991, towards the international standards and international norms. Furthermore, domestic and international postures were in compliance with each other. After the dismantlement of the nuclear weapons, South Africa became an example of non-proliferation in regards of commitment to norms, activism and transparency. Only after the accession to the NPT in 1993, the President stated officially in public that South Africa had nuclear weapons in the 1980s. The country also joined several agreements and treaties later namely the Nuclear Suppliers Group, the Pelindaba Treaty and the New Agenda Coalition (NAC) in 1998 (ibid).

7.3.International relations theory in case of South Africa

There are many different assumptions when it comes to the dismantlement of a nuclear arsenal. Some theories say that threats cause arming. However, no theory actually predicts disarmament when threats disappear. In the case of South Africa, the end of the Cold War and the removal of Cuban troops from Angola had an important impact on the change. Furthermore, the democratizing

reforms gave hope to end the regional tensions and conform with international standards and norms. The political allies under Frederik Willem de Klerk also decided to denuclearize and demilitarize. South Africa had a lot of international pressure to dismantle mainly because of its isolation. The first discussions to start the NPT started in 1987. The change of South Africa's nuclear policy however only started when Frederik Willem de Klerk became president on September 14, 1989. He immediately formed an ad hoc cabinet to discuss the NPT accession. Very soon it was no debate anymore whether to join the NPT or not but rather about how it should be implemented so South Africa can accede to the NPT. In November, the plan of dismantlement was presented and Willem de Klerk approved it. Furthermore, Willem de Klerk also approved to close the Y-plant, which was shut down on the first of February in 1990. Between July 1990 and July 1991, the weapons were dismantled and on the 10th of July, 1991 South Africa formally joined the NPT. The safeguards agreement with the IAEA then entered into force in September 1991 (Liberman, 2001).

7.4. Time after disarmament

South Africa experienced significant changes after the disarmament in regards to the threat environment. There were also other important changes during that time namely the end of the Cold War and also the fall of the Berlin Wall in November, 1989. The main changes for South Africa happened prior to these events. In 1988, there was an agreement signed with the US that resulted to the withdrawal of Cuban and South African troops from Angola and for Namibian independence. Furthermore, in 1988 and 1989, Moscow reduced the aid to Angola, the African National Congress (ANC) and Mozambique. The Soviet Union and Cuban allies had established threatening positions in Angola and Namibia. However, Willem de Klerk believed in change after his intended political reforms and to improve the situation with their neighbors and the

international community. The overall military expenditure between 1989 and 1993 was reduced by 40 percent and completely changed the threat perceptions in southern Africa. Economically speaking it was important to break out of isolation that was imposed on South Africa. It was important to start trading with other countries and restore the creditworthiness by installing correct economic and political measures. The decision of South Africa to first build nuclear weapons and then dismantle the program was connected to the security environment for the country. Willem de Klerk was the first one that saw that an improved security environment was a prerequisite for change. Furthermore, de Klerk was enthusiastic about the program. Therefore, it can be said that nationalist statist regimes favor nuclear weapons programs whereas liberalizing regimes do not. Willem de Klerk started a fundamental political change which ended with great economic and diplomatic opportunities. This is also the reason why the National Party was more market oriented (Liberman, 2001).

After the disarmament, South Africa took a leadership role in the NPT diplomacy. During the NPT Review Conference in 1995, South Africa presented a proposal that was leading to a compromise agreement for the extension of the treaty. In addition, along with other middle powers, South Africa brought forward nuclear disarmament proposals at the NPT Review Conference in 2000, and also took a leadership role in negotiating the African Nuclear-Weapons-Free Zone Treaty. South Africa also was actively involved in negotiations on a global treaty stopping the production of fissile materials and neutralizing existing stockpiles (Harris, Hatang, & Liberman, 2004).

7.5.Nuclear secrecy

To first build and then dismantle six Hiroshima type bombs is definitely a rarity in the history of international community. Many secrecy laws were utilized during the lifetime of the program. The case of South Africa is very valuable in the history of nuclear programs due to the fact that the

reasons of nuclear acquisition and then complete disarmament are unique. The non-proliferation policy therefore needs to be looked at in detail to understand the conditions of the state and their decision to disarmament. During a press conference in December 1992, representatives of the ANC demanded the NP to disclose all information regarding the program and also their present and past activities. Officials of the nuclear program disclosed only a limited amount of information. Waldo Strumpf, who was the head of the Atomic Energy Corporation, released only short overviews of the nuclear program but specific information about the South African decision making remains incomplete until today. However, South Africa is not the only country where the history of nuclear weapons remains shrouded in secrecy. Nuclear states as for example Israel, India or North Korea do also not disclose a lot of information about their program. As far as South Africa is concerned the country at least had a strong cooperation with the IAEA in regards to verification of the dismantlement of the nuclear program. Therefore, in this case South Africa might serve as a future model due to the fact that the country dismantled all nuclear weapons, joined the NPT, cooperated with the IAEA and acknowledged the comprehensive safeguards to check its nuclear facilities. The experience of South Africa in terms of verification and disarmament could be a useful procedure for other country, for instance if North Korea decides to disarm one day. However, one needs to address that nuclear secrecy is important at some point. Releasing information could lead to potential risks as it could assist terrorists or other nations for building nuclear weapons. There needs to be a clear distinction of information that reaches the public. Furthermore, also revealing the identity of nuclear weapons scientists is vulnerable due to recruitment offers of proliferating states. Therefore, documents that are released are very sensitive in that case (Harris, Hatang, & Liberman, 2004).

7.6.Reasons behind disarmament

The change in the leadership was indeed an important factor for South Africa's disarmament. From the nationalist-militarist president Pieter Willem Botha to a democratic president Frederik Willem de Klerk. The United States exerted a high level of pressure on South Africa during 1987 and 1989. De Klerk and his regime negotiated with the US and also conformed to the demands. Economic liberalization was not the most important reason to disarm back then. The hegemonic pressure from the United States was engraving. Furthermore, the United States is the main supporter of the NPT back then. The imposition of sanctions on South Africa produced a lot of change in the country. Therefore, South Africa was ready to negotiate, which led also to the withdrawal of Cuban troops from Angola. International norms, regimes, and pressure from below also had an influence on the dismantlement of South Africa's weapons of mass destruction (Purkitt, Burgess, & Liberman, 2002).

7.7.South Africa and the Additional Protocol

The Additional Protocol provides more tools for verification for the IAEA. It is not an agreement by itself but increases the ability of the IAEA to verify the peaceful use of all nuclear material in countries that also have comprehensive safeguards agreements with the IAEA. There are three types of safeguards agreements with the IAEA. The Additional Protocols are in force in 132 states and Euratom, and 16 states have signed it but it is not yet into force as of August 2018 (International Atomic Energy Agency, 2018).

As far as South Africa is concerned it was one of the first states that concluded an Additional Protocol with the IAEA in 2002. However, representatives of South Africa objected to make the Additional Protocol a condition for states that wish to import uranium enrichment. The guidelines have been adopted by consensus. However, South Africa still insisted on changes during

negotiations of the text. This pattern was very controversial in the nuclear diplomacy of South Africa. In order to have a better understanding in this context when it comes to Article 4 of the Nuclear Non-Proliferation Treaty and the Additional Protocol one needs to have a look at the negotiations itself. Article IV of the NPT says that *"nothing in this Treaty shall be interpreted as affecting the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with Articles 1 and 2 of this Treaty."* Therefore, the agreement said that Nuclear Weapon States do not provide nuclear weapons and also do not help in the development of nuclear weapons to Non-Nuclear Weapons States. Furthermore, Non-Nuclear Weapon States agreed to nuclear disarmament in the future, therefore giving up their nuclear weapons. South Africa is a member of the Non-Alignment Movement (NAM) and its position to the Additional Protocol explains the objection of South Africa. The position of NAM with regards to the Additional Protocol as a condition was seen very critical. This would mean to restrict access to technology especially for Non-Nuclear States. The NSG had a deal with Brazil and Argentina that they do not have to sign the Additional Protocol. This was another reason why South Africa took that position to negotiate the text in order to make the exception of those two states less significant. South Africa was concentrating on the point that the Additional Protocol was related to disarmament obligations of Nuclear Weapons States. Therefore, diplomats of South Africa had the chance to negotiate the text and reframe the double standards in the Additional Protocol (Pretorius, 2013).

In order to conclude this chapter of the case study one can say that it is important to understand the main domestic conditions of South Africa by illustrating its history to get an insight into their reasons for disarmament. Furthermore, the author also explained the connection to international relations theories.

8. UKRAINE

The following chapter concentrates on the last case study namely Ukraine. Alike other case studies that were described in previous chapters, the author also concentrates on the history of Ukraine's nuclear program and illustrate their main reasons for disarmament.

8.1.History

Ukraine had the third largest nuclear arsenal in the early 1990s. In order to get security assurances from the Nuclear-Weapon States, Ukraine decided for total disarmament. In this case, Ukraine is also a very unique case due to the fact that Russia violated these assurances by the annexation of Crimea. The break of Russia with regards to the security commitments has consequences for the international security and also on the non-proliferation regime (Budjeryn, 2016).

Even before the fall of the Soviet Union, Ukraine wanted to turn into a nuclear-free state. Ukraine also declared this in the 1990 Declaration of Sovereignty. There were different motivations of Ukraine to become a nuclear-free state and the nuclear power accident of Chernobyl in 1986 was not the main motivation back then. The leaders of the National Democrats followed the thinking that full independence of Ukraine is impossible as long as Moscow had control over the installations and territory. Belarus and Kazakhstan were also in the same situation and treated similar like Ukraine. The United States and their allies developed several policies, which applied to Ukraine, Belarus and Kazakhstan (ibid).

In August 1991, Ukraine declared its independence and also its ownership of all military units that were deployed on their territory. This included 176 intercontinental ballistic missiles (ICBM), 1,240 nuclear warheads, 44 long-range strategic bombers, 588 air-launched cruise missiles (ALCM), and 2,600 tactical nuclear weapons. Furthermore, a big nuclear research infrastructure

that included the largest ICBM factory in the world was part of the declaration of Ukraine. The withdrawing of nuclear weapons started before the Soviet Union collapsed. All weapons were removed from Ukraine by the end of May 1992 (ibid).

8.2.Reasons for disarmament

Independence and the accident of Chernobyl were not the only reasons for Ukraine for disarmament. Another reason was the establishment of operational control, which would have been a big issue for Ukraine after their service life expired in the end of the 1990s, due to the fact that the country lacked key elements of the program. This included important elements as for example facilities for uranium enrichment and plutonium reprocessing. Furthermore, extensive research, maintenance and nuclear modernization would have been important elements. In addition, the government of the Ukraine estimated the cost that would have been necessary to invest in the program which was approximately 2 billion US $. This would have been very difficult for Ukraine due to the fact that the country had a severe economic crisis after the post-Soviet evolution. Furthermore, Ukraine received compensation of its nuclear weapons and also for removing the nuclear warheads from their territory. Ukraine also received technical assistance of the United States for the transfer of the nuclear weapons to Russia. After the transfer of the nuclear weapons, Ukraine attained security assurances from the members of the NPT (Budjeryn, 2016).

In May 1992, Ukraine signed the Lisbon Protocol which made the country also a member to the Strategic Offensive Arms Reduction Treaty (START) (Budjeryn, 2016). The main objective of the protocol was to ensure denuclearization by transferring nuclear warheads to Russia. In addition, the signature of the protocol pursued to join the NPT as a non-nuclear state by 1998. However, the parliament of Ukraine rejected to ratify the protocol due to the fact that they demanded security guarantees from the United States and Russia. This issue remained problematic for more than a

year and in January 1994, Ukraine finally signed a Trilateral Statement with the United States and Russia. This agreement included security guarantees from nuclear states and compensations for the disarmament and transfers of the nuclear materials to Russia. All these guarantees were endorsed at the Budapest summit of the Organization for Security and Cooperation in Europe (OSCE). Furthermore, the parliament of Ukraine ratified the accession to the NPT. Until the mid of 1996, Ukraine removed their last nuclear warhead. However, the signed Budapest Memorandum failed to offer a real security guarantee for the state. The Budapest Memorandum said that there will be no use of force and their weapons will not be used against then except in accordance with the UN Charter or self-defense. Furthermore, it stated that no economic coercion against Ukraine will be executed. However, this was only agreed by the West and also did not include assistance in case of an attack against Ukraine. In addition, Russia is a veto power within the Security Council which means that it could block any decision (Riabchuk, 2009).

Clearly, Russia breached the Budapest Memorandum with the annexation of Crimea. Ukraine had a big nuclear arsenal and also more atomic weapons than China, France and the United Kingdom. Yet, Ukraine decided to disarm under pressure from Washington and Moscow and signed the Lisbon Protocol in 1992. Russia, the United Kingdom and the United States signed multilateral document with Ukraine and China and France released a unilateral declaration of their government. When looking at the case of Crimea, Russia used military force. Even though many Western states reacted with sanctions against Russia, the country was still an important oil supplier for the EU. It seemed Russia has forgotten about the Budapest Memorandum in 1994. Annexing Crimea by military force, causing a war that resulted in thousands of deaths, injured and traumatized people and also refugees. Even tough Ukraine is receiving economic assistance of Western countries, there was no military support so far. Many states stay quiet when it comes to

the annexation of Crimea. China for example never took a clear position with the Russia's behavior but trying to benefit economically from the discord between the West and Moscow (Umland, 2016).

Ukraine decided to denuclearize voluntarily through diplomacy. Until today, politicians are very proud to that action and see themselves as an example for nuclear disarmament that complied with international obligations and norms. Throughout the history of Ukraine, nuclear weapons were always guarded by the Russian military, even after the Soviet Union collapsed. After the collapse of the Soviet Union, Ukraine never intended to become a nuclear state. The country was independent within one year and with their nuclear arms Ukraine did not want to be placed among risked nations like North Korea, Iraq or Iran. Ukraine demanded two conditions for their disarmament, namely security guarantees form nuclear- weapons states and financial compensation and technical assistance for the transfer to Russia. These conditions were however, subject to negotiations (Riabchuk, 2009).

8.3.International relations theory in case of Ukraine

Many scholars believe that if Ukraine kept their nuclear weapons, Russia would have never annexed Crimea in March, 2014. As Ukraine was the third-largest nuclear power, Russia might have not started this fight. John Mearsheimer also argued that Ukraine should have kept the nuclear weapons and Russia would have not invaded. However, an important question to raise here is that what would have happened if Ukraine would have kept their nuclear weapons? As already mentioned above, Ukraine was in a very difficult situation back then. Therefore, modernize and maintain the weapons would not have been possible for the country. Even though getting the expertise needed for this would have been possible, the price for their economic and diplomatic relations would have been too high. Other scholars, however, argue that a nuclear-armed state does

not fight another nuclear-armed state. Therefore, they argue that the nuclear weapons of Ukraine would have not detained Russia to invade Crimea (Rublee, 2015).

Ukraine joined the NPT in 1994, and gave up nuclear weapons in exchange for security assurances. Russia violated these assurances 20 years later. Many scholars agree that this had a great impact on the non-proliferation regime and argue that it may be weakened (Fitzpatrick, 2014).

This case study of Ukraine shows that there are various reasons for the county's disarmament used for the analysis of this thesis. As diplomacy was a main reason for Ukraine to disarm, the author shortly concentrates on the role of international organizations in the next chapter.

9. ROLE OF INTERNATIONAL ORGANIZATIONS

In this chapter, the author explains the specific role of the European Union and the United Nations when it comes to international agreements and deals. This is important as both organizations play an important role in the case of non-proliferation treaties and agreements.

9.1.EU

The European Union has a specific role within several treaties and agreements as for example the NPT, CTBT and the Ban Treaty. There are two members of the European Union that follow a national security strategy with nuclear weapons namely UK (until Brexit is fully carried out) and France. Both states are part of the NPT and permanent members of the UN Security Council. Furthermore, they are exempted from safeguard inspections of EURATOM and the IAEA. In addition, one needs to point out that the United States has deployed nuclear weapons in Belgium, The Netherlands, Germany and Italy, which contradicts article I and II of the non-proliferation treaty. Except Austria and Ireland, all members of the European Union refused to negotiate the Treaty on Prohibition of Nuclear Weapons (TPNW). There are different standpoints of the member states of the EU as some are active in nuclear fuel cycle such as France, and others are banning nuclear activities completely such as Austria. As far as the NPT is concerned, the EU calls for the necessity of universality of the NPT whereas no specific actions are taken by the EU. Frederica Mogherini, High Representative of the European Union for Foreign Affairs and Security Policy, also expressed the need for universalization of the NPT. However, some European countries provide Israel with nuclear material and technology (Soltanieh, 2018).

As far as the JCPOA is concerned the EU should take a strong lead due to the fact that the US withdrew and started a trade war against the EU. The EU should work against the threats and

sanctions on European countries and resist the pressure of the US. Therefore, measures need to be taken in order countries can continue to cooperate with Iran (ibid).

9.2. United Nations

The United Nations has been working on stopping the proliferation of weapons of mass destruction for more than 40 years. Even though the total elimination of those weapons is desirable, the feasibility is doubted. Some states, as for example the US, have talked about the elimination of their weapons, but never committed to a timetable. Scholars argue that there is a huge lack of trust between NWSs and NNWSs. NNWSs committed to the NPT with the hope that NWSs also follow their obligations. However, as NWSs ignore Article VI of the NPT, distrust is growing. The United Nations have a comparative advantage in establishing norms in negotiations of international agreements to control the spread of WMDs. Furthermore, the UN is the only international body that gets the full authority of nations to negotiate multilateral commitments to non-proliferation. However, the effectiveness of the UN is questionable with regards to the elimination of WDMs. Although, the role of Treaty Regimes and Regional Nuclear-Weapons-Free Zones should be strengthened. When there is a high political will for disarmament, the United Nations is well-positioned to play an important role. However, the ability of the UN to foster such a global commitment seems to be difficult due to structural and operational problems. The international community must work on these problems and build consensus on the role of the UN (The Stanley Foundation, 1996).

The next chapter shows the results of the analysis including also the point of treaties where international organizations play a major role.

10. RESULTS OF ANAYLSIS

After the detailed examination of the cases the author could find the following domestic conditions why states agreed to nuclear deals:

- Domestic regime transitions or new leadership
- High cost of nuclear program or maintenance
- International sanctions
- Regional stability, security assurances or end of security threats from outside
- International pressure to sign the NPT
- Independence
- Operational difficulties (modernization or research)
- Economic hardship
- Nuclear accidents

All countries had different domestic conditions even though some reasons apply to all cases. Below all countries are listed in a table to clearly see which domestic conditions are valid for each case.

Table 1: Domestic conditions of each case study

	Iran	South Africa	Ukraine	North Korea
Domestic regime transitions (new leadership)	-	✔	✔	-
High cost of nuclear program (cost of maintenance)	✔	✓	✓	✓

International sanctions	✓	✓	-	✓
Regional stability, security assurances (end of security threats from outside)	✓	✓	✓	-
International pressure to sign the NPT	✓	✓	-	✓
Independence	-	-	✓	-
Operational difficulties (modernization, research)	✓	-	✓	-
Economic hardship	✓	✓	✓	✓
Nuclear accidents	-	-	✓	-
Total	6	6	7	4

Throughout the specific examination of all cases, the author found support for both proposed hypotheses. The hypotheses are again as follows:

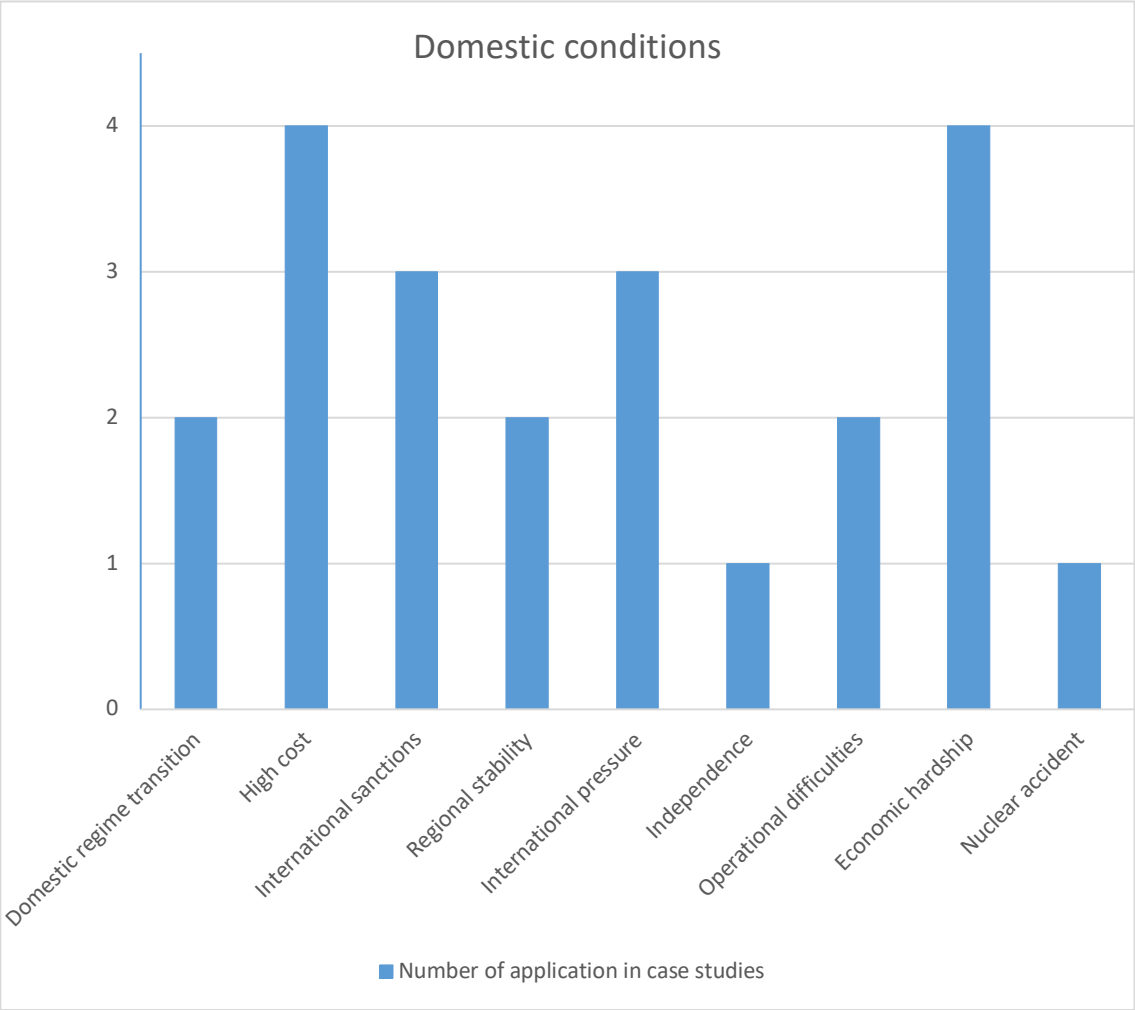
Hypothesis 1: International pressure to join the NPT lowers the risk of nuclear proliferation.

Hypothesis 2: The economic difficulties and cost of the nuclear program increases the possibility to sign an international nuclear non-proliferation agreement.

Hypothesis 1 can partly be confirmed as international pressure to join the Non-proliferation Treaty was no domestic condition to lower the risk of nuclear proliferation for all cases. This was true for Iran and South Africa but not in the case of Ukraine. The NPT established three different pillars namely for non-proliferation, peaceful use of nuclear energy and disarmament. However, as also discussed in this thesis, the effectiveness of the NPT during the last years is questionable. Even though the liberal institutionalists would prefer to strengthen the multilateral treaty-based approach to address the challenges of WMD, there is evidence from the realist point of view that treaties do not necessarily cause more peace and lower the risk of nuclear proliferation. This can be also seen in the case studies. There are various articles in the NPT, which have been described in this thesis, that are weak when it comes to the actual implementation. Experts suggest various recommendations to save the NPT. An important point would be a binding timeline for NWS to reduce and finally eliminate their nuclear weapons.

Looking at Hypothesis 2, the author could find confirmation due to the fact that economic hardship and the high costs of the nuclear program were found in each case study. In order to draw a conclusion for North Korea both economic hardship and high costs of nuclear program are present domestic conditions in that country. As for example with Ukraine, the country had a severe economic crisis after the port-Soviet evolution and also the service life expired in the end of the 1990s. South Africa also had similar reasons as the international pressure of isolation was increasing. The next Figure below shows that the high cost of nuclear program and economic hardship were the only two domestic conditions that were present in each case study.

Figure 1: Number of application in case studies



Although several reasons are currently also present in North Korea, it seems that there need to be further reasons in order to sign an international nuclear non-proliferation agreement. The analysis shows that a domestic regime transition, a new leadership and security assurances also have a major impact on the development to reach an agreement for non-proliferation. These domestic conditions are currently not applicable in North Korea. Due to this fact, finding a solution for North Korea seems to be a challenging issue with the current domestic situation of the country.

As demonstrated in this thesis, each case study showed different reasons for disarmament and non-proliferation. However, some reasons are true in every case. The availability of data for each case

study have presented a significant limitation and the author had to rely on a limited amount of data in this research. However, the author used various different resources to mitigate this limitation.

10.1. Differences between the states

When South Africa decided to reverse the path regarding their nuclear weapons it was an important step for the international status against proliferation and in favor of disarmament. Furthermore, the country played an important role between nuclear weapons and non-aligned states. Ever since the country has been in accordance with the international commitment to non-proliferation. The country is also under the IAEA surveillance. Different than other countries, South Africa cannot be ambiguous anymore, without raising concerns in the international community. The case of South Africa shows that having nuclear weapons does not relate to power (Carpes, 2013).

When comparing the cases to North Korea one needs to point out that the states itself had similar reasons but were in different conditions. All states went through a different history and their primary reason for disarmament differ. In the case of the Ukraine crisis one can argue that it offered not a good example for North Korea. Security guarantees would not be a primary reason for North Korea to give up their nuclear weapons. With the annexation of Crimea, North Korea gained confirmation that they can only rely on their own deterrence. However, Russia is important for North Korea in terms of counterbalance as China would be the only connection. Therefore, North Korea supports the position of Moscow. Given the cases with Libya, Syria or Ukraine they show that security guarantees can be very weak. This gives North Korea further evidence to not rely on such offers of the West (Fitzpatrick, 2014).

There are several conditions in order to reach an agreement, especially security agreements. One major condition is trust and cooperation as security is not easy to measure. North Korea is not

transparent with regards to their military laboratories and mutual restraint might not seem attractive for their decision makers. In addition, the US left the JCPOA and also just recently the INF (Intermediate Range Nuclear Forces) Treaty. Even though, scholars of international relations argue that country arm because of threat, no theory predicts disarmament once the threat disappears. There needs to be political will of the leadership to do so, which can be also seen in the case of South Africa. As far as Ukraine is concerned, one can see that security assurances can be violated years later. Therefore, several reasons need to be present in order to have negotiations for nuclear non-proliferation and disarmament. Regarding North Korea there needs to be further domestic change before negotiations can start. Usually the method of non-proliferation involves treaties, international conventions, regulations and also non-binding codes of conduct. It is however, important that the European Union and the US pursue the same goals and strategies when dealing with the conflict of North Korea. This is certainly important for the successful implementation of an agreement. The first approaches between North and South Korea were also an important step towards a better situation on the peninsula. It is also in the interest of the EU to have a de-escalation between North and South Korea (Ballbach, 2018). After the summit of North and South Korea, South Korea also expressed the willingness of North Korea to denuclearize completely. Reaching an agreement in principle will not be difficult. However, the details will be difficult to agree on (Landler & Sang-Hun, 2018). In addition, mainly the US and China have to agree to a reorganization in the region (Maull, 2017).

11. CONCLUSION AND POLICY RECOMMENDATIONS

All countries analyzed in this thesis were in different conditions and status. Also, the transparency of their nuclear arsenals was different in each case study. As for example the US openly declare their total numbers also regarding their deployed warheads, North Korea shares a different opinion in this case (Berger, 2014). Intelligence agencies of the US are arguing for a long time that North Korea is hiding their complete program (Kube, Dilanian, & Lee, 2018).

However, the United States and North Korea have a nuclear deterrent relationship and need to continue to talk in order to manage the danger shared in the international community (Panda, 2018). The decision of the United States' president Donald Trump to break the nuclear agreement with Iran have erased a European illusion (Overhaus, 2018). It elicited a trilemma for the EU3 because first, they need to take the leadership role to save the nuclear deal without much help from the US or Iran. Secondly, the UK, France and Germany cannot change course and decide how to proceed with the other international contracting parties, Russia and China. Thirdly, it will be a difficult challenge for Europe to be the most important role to be hold accountable for the success but facing sanctions directly or indirectly on European companies. However, renegotiations for a completely new deal would be irrelevant in this case but rather exploring new possibilities to cooperate to safe the deal (Perthes, 2018). The trustworthiness of the United States as the country left the JCPOA, decreased. This could be an obstacle for negotiations with North Korea due to the fact that trust is important to reach an agreement (Walt, 2018). This can also be linked to the theoretical framework explained in the beginning of the thesis.

The Stockholm International Peace Research Institute (SIPRI) launched the Yearbook 2018 on Armaments, Disarmament and International Security. The key findings include that all NWS are developing new systems and modernize their existing ones. With the US, Russia, UK, France,

China, India, Pakistan, Israel and North Korea there is a total of 14,465 nuclear weapons. In 2017 SIPRI estimated approximately 14,935 nuclear weapons worldwide. Russia and the US account for approximately 92 percent of all nuclear weapons whereas the decrease is mainly because of these two states. This decrease can be connected to the Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START) (SIPRI Yearbook, 2018).

As far as North Korea is concerned, so far, no party could find a way to solve the crisis. North Korea's regime sees their nuclear weapons as the only security against external enemies even though their poor economic situation. South Korea and Japan are protected by the United States and China does not want North and South Korea to unite as the alliance of Seoul and Washington can be a threat for Beijing. Therefore, China is supporting North Korea in terms of their economic situation. Beijing is having a lot of pressure because until today, the US still depend on economic relations with China. The situation is tangible and the risks are high. This is also why Beijing calls for diplomatic solutions even though no recommendations are expressed. The EU could definitely have a strong role in this case as it is the second most important business partner for China after the US. The EU should try to convince Beijing to apply pressure regarding sanctions towards Pyongyang. The EU would be in a good position to pursue such a path diplomatically (Stanzel, 2017). The government in North Korea seems to be unable to offer the population a program that solves the food scarce. Therefore, private markets were created all over North Korea and sold food and other goods. This seems to be a significant milestone in North Korea's economic development. Kim Jong-Un's major plan when he took over power was the economy and the military. As the development of their nuclear weapons program is complete one could argue that the regime's next steps concentrate on economic liberalization and shifts in their foreign policy. As North Korea would need a release of their economic sanctions form the US and UN to improve their economy,

negotiations should be lifted off (Jeppesen, 2019). The next remarkable attempt to start negotiations to reach an agreement is on the 27th and 28th of February 2019 in Hanoi, Vietnam, where President Donald Trump and Kim-Jong-Un are meeting (Goldman, 2019).

This thesis shows that even though countries have domestic conditions that lead them to agree on a nuclear deal, the treaty-based approach seems limited as countries breach certain articles. Finding a solution for North Korea after this analysis of this thesis is challenging as each case differs in various ways and a one-fits-all solution is not possible when it comes to non-proliferation and disarmament. However, it can be said that diplomacy seems to be the only possible way in the world of politics and international relations regarding nuclear crises. Therefore, the author recommends to have negotiations in good faith also in the future to prevent nuclear wars and accidents that can affect each and every one on this planet.

11.1. Suggestions for Future Research

North Korea is a big topic in the world of international politics and international relations. Many scholars and policy advisors try to find a solution for this crisis. Therefore, further research needs to be conducted around this topic. The crisis of the DPRK is very complex and politicians, diplomats or policy advisors need a clear structure for future negotiations. Future research is also necessary as there are ongoing events around the topic of non-proliferation and disarmament of nuclear weapons. The United States just announced to leave the Intermediate-Range Nuclear Forces Treaty on February 1, 2019. This definitely has an impact on future negotiations with other countries as the US is taking a new position under President Trump.

12. REFERENCES

ACCORD. (2018). *COI Compilation: Iran.* Austrian Centre for Country of Origin & Asylum Research and Documentation, https://www.ecoi.net/en/file/local/1441174/1226_1534925790_iran-coi-compilation-july-2018-final.pdf.

Amano, Y. (2018). *Iran is Implementing Nuclear-related JCPOA Commitments.* https://www.iaea.org/newscenter/news/iran-is-implementing-nuclear-related-jcpoa-commitments-director-general-amano-tells-iaea-board.

Arms Control Association. (2018). *Agreed Framework Between The United States of America And The Democratic People's Republic of Korea.* https://www.armscontrol.org/treaties/agreed-framework-between-the-united-states-of-america-and-the-democratic-peoples-republic-of-korea.

Ballbach, E. (2018). *Entspannung in Korea? Zur jüngsten Annäherung zwischen Seoul und Pjöngjang.* Stiftung Wissenschaft und Politik, Deutsches Institut für Internationale Politik und Sicherheit.

Ban Treaty. (2017). *UN Treaty on the Prohibition of Nuclear Weapons.* http://www.icanw.org/treaty-on-the-prohibition-of-nuclear-weapons/.

Beinart, P. (2018). *How Sanctions Feed Authoritarianism.* The Atlantic, https://www.theatlantic.com/international/archive/2018/06/iran-sanctions-nuclear/562043/?utm_source=feed.

Berger, A. (2014). *The P5 Nuclear Dialogue: Five Years On.* https://rusi.org/sites/default/files/201407_op_the_p5_nuclear_dialogue.pdf, RUSI.

Berger, A. (2017). *A House Without Foundations The North Korea Sanctions Regime and its Implementation.* https://rusi.org/sites/default/files/201706_whr_a_house_without_foundations_web.pdf, RUSI.

Blockmans, S. (2018). *Despite Trump's theatrics, the Iran deal can be saved.* CNN.com, https://edition.cnn.com/2018/04/13/opinions/how-europe-can-save-the-iran-nuclear-deal-opinion-intl/index.html.

Brewster, R. (2004). *The Domestic Origins of International Agreements.* Virginia Journal of International Law.

Buchen, S. (2018). *Europäische Unternehmen und Iran-Geschäfte.* Qantara, https://de.qantara.de/inhalt/europaeische-unternehmen-und-iran-geschaefte-jetzt-machen-wir-den-rueckzieher.

Budjeryn, M. (2015). The Breach: Ukraine's Territorial Integrity and the Budapest Memorandum. *Nuclear Proliferation International History Project*.

Budjeryn, M. (2016). *Was Ukraine's Nuclear Disarmament a Blunder?* World Affairs.

Carpes, M. (2013). *When Words are not Enough: assessing the relationship between international commitments and the nuclear choices of Brazil, India and South Africa.* Vol. 34, No. 6. Third World Quarterly.

Center for Nonproliferation Studies. (2012). *Six-Party Talks.* Inventory of International Nonproliferation Organizations and Regimes, https://www.nti.org/media/pdfs/6ptalks_1.pdf.

Cho, I., & Jung-En Woo, M. (2007). North Korea in 2006: The Year if Living Dangerously. *Journal of Peace Research*.

Choo, Y. S. (2003). Handling North Korea: Strategy and Issues. *The Johns Hopkins University Paul H. Nitze School of Advanced International Studies (SAIS)* .

Collier, D. (1993). *The Comparative Method.* American Political Science Association.

Comprehensive Nuclear-Test-Ban Treaty Organisation. (1996). *Comprehensive Nuclear-Test-Ban Treaty.* https://www.ctbto.org/the-treaty/treaty-text/.

Debouzy, O. (2012). Nuclear Deterrence and War. *The Oxford Handbook of War*.

Der Standard. (2018). *Die Außenministerin verteitigte in New York das Iran-Abkommen.* https://derstandard.at/2000088412864/Aussenministerin-Kneissl-hielt-ihre-Rede-vor-der-Uno-in-vier. Der Standard.

ElBaradei, M. (2003). *Implementation of the NPT safeguards agreement in the Islamic Republic of Iran.* IAEA Board Report, https://www.iaea.org/sites/default/files/gov2003-40.pdf.

Esser, F., & Vliegenthart, R. (2017). *Comparative Research Methods.* The International Encyclopedia of Communication Research Methods.

FATF. (2018). *KnowYourCountry: North Korea.* https://www.knowyourcountry.com/northkorea1111.

Federation of American Scientists. (2018). *Nonproliferation & Counterproliferation.* https://fas.org/issues/nonproliferation-counterproliferation/.

Fitzpatrick, M. (2014). *The Ukraine Crisis and Nuclear Order.* International Institute for Strategic Studies.

Garduño, M. (2014). *The collective action of Mujahedeen-e Khalq Organization (MKO): evolution, interests and current situation.* Faculty of Political and Social Sciences of the National Autonomous University of Mexico.

Gierco, J., Ikenberry, G., & Mastanduno, M. (2015). Introduction to International Relations. *Weapons of Mass Destruction*.

Goldman, R. (2019). *A Guide to Trump and Kim Jong-un's Meeting in Vietnam.* https://www.nytimes.com/2019/02/08/world/asia/trump-kim-summit-north-korea-vietnam.html?module=inline: The New York Times.

Goulka, J., Hansell, L., Wilke, E., & Larson, J. (2009). *The Mujahedin-e Khalq in Iraq: A Policy Conundrum.* National Defense and Research Institute: RAND, https://www.rand.org/content/dam/rand/pubs/monographs/2009/RAND_MG871.pdf.

Gyeong-seob, O. (2010). International Cooperation for the Denuclearization of North Korea: Limitations and Alternatives. *Research Fellow Sejong Institute*.

Harris, V., Hatang, S., & Liberman, P. (2004). *Unveiling South Africa's Nuclear Past.* Journal of Southern African Studies, Volume 30, Number 3.

Hughes, L., Lantis, J., & Solís, M. (2014). *The Life Cycle of Regimes: Temporality and Exclusive Forms of International Cooperation.* Journal of International Organizations Studies, 85-115.

Huntley, W. L. (2006). Rebels without a cause: North Korea, Iran and the NPT. *International Affairsm*.

Hymans, J. E. (2017). Theories of nuclear proliferation: The State of the Field. *Research Computing Facility at USC*.

IAEA Agreement. (1972). *The Structure and Content of Agreements between the Agency and States required in connection with the Treaty on the Non-Proliferation of Nuclear Weapons.* https://www.iaea.org/sites/default/files/publications/documents/infcircs/1972/infcirc153.pdf.

International Atomic Energy Agency. (2018). *Additional Protocol.* https://www.iaea.org/topics/additional-protocol.

Jeppesen, T. (2019). *Shopping in Pyongyang, and Other Adventures in North Korean Capitalism.* https://www.nytimes.com/2019/02/14/magazine/north-korea-black-market-economy.html: The New York Times.

Jervis, R. (1982). *Security Regimes.* International Organization.

Jiechi, Y., Kouchner, B., Steinmeier, F.-W., Lavrov, S., Miliband, D., Rice, C., & Solana, J. (2008). *Proposal of possible areas of cooperation with Iran.*

Keatinge, T., Dall, E., Tabrizi, A., & Lain, S. (2017). *Transatlantic (Mis)alignment Challenges to US-EU Sanctions Design and Implementation.* https://rusi.org/sites/default/files/20170707_transatlantic_misalignment_keatinge.dall_.tabrizi.lain_final.pdf, RUSI.org.

Keohane, R. O. (1982). *The demand for international regimes.* International Organization.

Keohane, R. O. (1988). *International Institutions: Two Approaches.* International Studies Quarterly.

Keohane, R., & Martin, L. (1995). *The Promise of Institutionalist Theory.* International Security, Vol. 20, No. 1.

Kissinger, H. (1957). *A World Restored: Metternich, Castlereagh and the Problems of Peace.* The Riverside Press Cambridge.

Korean Trade-Investment Promotion Agency (KOTRA). (2009). Trends in North Korea's Foreign Trade 2007. *Korean Trade-Investment Promotion Agency*.

Kornberg, G. (2017). South African Nuclear Weapons. *Stanford University*.

Krasner, S. (1982). *Structural causes and regime consequences: regimes as intervening variables.* International Organization.

Kristens, H., & Norris, R. (2015). *Global nuclear weapons inventories, 1945–2013.* Bulletin of the Atomic Scientists, doi.org/10.1177/0096340213501363.

Kristensen, H., & Norris, R. (2017). *Worldwide deployments of nuclear weapons, 2017.* Bulletin of the Atomic Scientists, DOI: 10.1080/00963402.2017.1363995.

Kristensen, H., & Norris, R. (2018). North Korean nuclear capabilities, 2018. *Bulletin of the Atomic Scientists, 74*(1), 41-51.

Kristensen, H., & Norris, R. (2018). *United States nuclear forces, 2018.* Bulletin of the Atomic Scientists, DOI: 10.1080/00963402.2018.1438219. 74:2.

Kube, C., Dilanian, K., & Lee, C. (2018). *North Korea has increased nuclear production at secret sites, say U.S. officials.* https://www.nbcnews.com/news/north-korea/north-korea-has-increased-nuclear-production-secret-sites-say-u-n887926, NBC News.

Lamont, C. (2015). *Research Methods in International Relations.* SAGE.

Landler, M., & Sang-Hun, C. (2018). *North Korea Drops Troop Demand, but U.S. Reacts Warily.* The New York Times, https://www.nytimes.com/2018/04/19/world/asia/north-korea-american-troops-withdrawal-trump.html.

Lee, E. Y. (2017). Will Trump's Military Option against North Korea Work? Legal and Political Restraints. *Journal of East Asia and International Law, 10*(2), 451-462.

Lee, H. Y. (2013). North Korea in 2012 Kim Jong Un's Seccession. *Journal of Peace Research*.

Levy, J. (2008). *Case Studies: Types, Designs, and Logics of Inference.* Conflict Management and Peace Science, 25:1–18, https://is.muni.cz/el/1423/jaro2013/MVZ453/um/Levy--Case_Studies-Types_Designs_and_Logics_of_Inference.pdf.

Liberman, P. (2001). *The Rise and Fall of the South African Bomb.* International Security, Vol. 26, No. 2.

Machiavelli, N. (1532). *Prince on the Art of Power.*

Mattis, J. (2018). *Nuclear Posture Review.* https://fas.org/issues/nuclear-weapons/nuclear-posture-review/, Federation of American Scientists.

Maull, H. (2017). *Was es bräuchte, um Nordkoreas Bombendrohungen zu entschärfen.* Stiftung Wissenschaft und Politik, Deutsches Institut für Internationale Politik und Sicherheit.

Mearsheimer, J. J. (1995). *The False Promise of International Institutions.* International Security.

Moon, C.-I. (2015). Why the Iran deal could work for North Korea. *Economics, Politics and Public Policy in East Asia and the Pacific*.

Mousavian, S. H. (2018). *The Strategic Disaster of Leaving the Iran Deal - Trump Is Making the Middle East Less Safe.* https://www.foreignaffairs.com/articles/iran/2018-05-10/strategic-disaster-leaving-iran-deal.

Nuclear Posture Review. (2018). *United States of America Department of Defense* . https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF.

Nuclear Threat Initiative. (2011). *US-DPRK Agreed Framework.* https://www.nti.org/learn/treaties-and-regimes/us-dprk-agreed-framework/.

Nuclear Threat Initiative. (2015). South Africa: Nuclear. *James Martin Center for Nonproliferation Studies at the Middlebury Institute of International Studies*.

Overhaus, M. (2018). *Transatlantische Tragödie.* Stiftung Wissenschaft und Politik, https://www.swp-berlin.org/kurz-gesagt/2018/transatlantische-tragoedie/.

Panda, A. (2018). *How to Keep a Cyberattack from Turning into Nuclear War?* https://www.defenseone.com/ideas/2018/10/how-avoid-cyberattack-turning-nuclear-war-keep-talking/152236/?oref=d-topstory, defenseone.com.

Parsi, T. (2016). *The Iran Deal Worked - Here's How to Make It Even More Effective.* https://www.foreignaffairs.com/articles/iran/2016-07-11/iran-deal-worked.

Perry, W. (2018). *Global Development and WMD Nonproliferation.* https://www.dipacademy.ru/about/press/news/sobytiya/V-Diplomaticheskoy-akademii-MID-Rossii-sostoyalas-vstrecha-gospodina-Ulyama-Perri-ministra-oborony-S/.

Perry, W. J. (2006). Proliferation on the Peninsula: Five North Korean Nuclear Crisis. *Journal of Peace Research*.

Perthes, V. (2018). *Die Europäer müssen jetzt ohne die USA mit Iran verhandeln.* Stiftung Wissenschaft und Politik, https://www.swp-berlin.org/kurz-gesagt/2018/die-europaeer-muessen-jetzt-ohne-die-usa-mit-iran-verhandeln/.

Petruzzello, M., & Sinha, S. (2014). *Agreed Framework: United States and North Korea.* https://www.britannica.com/event/Agreed-Framework.

Plant, T., & Varriale, C. (2018). *Security on the Korean Peninsula: The Latest from RUSI.* Royal United Servies Institute, Vol. 38, No. 9.

Pretorius, J. (2013). *Nuclear Politics of Denial: South Africa and the Additional Protocol.* International Negotiation 18 (2013) 379-399.

Purkitt, H., Burgess, S., & Liberman, P. (2002). *Correspondence - South Africa's Nuclear Decisions.* International Security, Volume 27, Number 1.

Ragin, C. (1987). *The Comparative Method.* SAGE Publications Inc.

Riabchuk, M. (2009). *Ukraine's Nuclear Nostalgia.* World Policy Institute.

Richter, W. (2018). *Erneuerung der nuklearen Abschreckung.* Stiftung Wissenschaft und Politik, https://www.swp-berlin.org/fileadmin/contents/products/aktuell/2018A15_rrw.pdf.

Rogin, J. (2017). Inside the drive to ‘make a deal’ with North Korea. *The Washington Post*.

Roselle, L., & Spray, S. (2008). *Research and Writing in International Relations.* Routledge.

Rublee, M. R. (2015). *Fantasy Counterfactual: A Nuclear-Armed Ukraine.* International Institute for Strategic Studies.

Sanger, D. (2004). *Pakistani Says He Saw North Korean Nuclear Devices*. Retrieved from The New York Times: http:// www.nytimes.com/2004/04/13/world/pakistani-says-he- saw-north-korean-nuclear-devices.html

Shahshahani, S. (2008). *Politics under the Cover of Law: Can International Law help resolve the Iran Nuclear Crisis?* Boston University School of Law, https://sshahshahani.github.io/Shahshahani_Politics_Under_Cover_of_Law.pdf.

Shea, T. E. (2017). *The Non-Proliferation and Disarmament Challenges of Naval Nuclear Propulsion.* Federation of American Scientists.

Sidhu, W. (2014). Weapons of Mass Destruction. In *International Organization and Global Governance.* Routledge.

SIPRI Yearbook. (2018). *Modernization of nuclear weapons continues; number of peacekeepers declines.* https://www.sipri.org/media/press-release/2018/modernization-nuclear-weapons-continues-number-peacekeepers-declines-new-sipri-yearbook-out-now, SIPRI.org.

Skocpol, T. (2015). *States and Social Revolutions: A Comparative Analysis of France, Russia and China.* Cambridge University Press.

Smith, M. E. (2004). *Europe's Foreign and Security Policy: The Institutionalization of Cooperation.* Journal of Central European Affairs.

Solana, J. (2006). *Elements of a proposal to Iran.* Report of the Secretary General, High Representative for CFSP.

Soltanieh, A. A. (2018). *The Future of Security and Defense of Europe.* Nebjija University & CICA, Madrid.

Stanzel, V. (2017). *Nordkorea: Europa am Zug.* https://www.swp-berlin.org/kurz-gesagt/nordkorea-europa-am-zug/, Stiftung Wissenschaft und Politik.

The Stanley Foundation. (1996). *The Role of the United Nations in Eliminating Weapons of Mass Destruction.* Report of the Twenty-Seventh United Nations Issues Conference, https://www.stanleyfoundation.org/publications/archive/Issues96.pdf.

The Washington Post. (2005). *Full Text: N. Korea's Statement on Its Nuclear Program.* http://www.washing tonpost.com/wp-dyn/articles/A13987-2005Feb10.html; http://www.washingtonpost.com/wp-dyn/articles/A13987- 2005Feb10_2.

Treaty on the Non-Proliferation of Nuclear Weapons. (1968). *International Atomic Energy Agency.* https://www.iaea.org/publications/documents/treaties/npt.

Treaty on the Non-Proliferation of Nuclear Weapons. (1970). *International Atomic Energy Agency.* https://www.iaea.org/sites/default/files/publications/documents/infcircs/1970/infcirc140.pdf.

Umland, A. (2016). *The Ukraine Ecample: Nuclear Disarmament Doesn't Pay.* World Affairs.

US-State Department. (2002). *Interview on NBC's Meet the Press with Tim Russert.* https://2001-2009.state.gov/secretary/former/powell/remarks/2002/ 16240.

Vaez, A. (2018). *Can Europe Save the Iran Deal? - Time for It to Consider a Plan B.* https://www.foreignaffairs.com/articles/europe/2018-01-16/can-europe-save-iran-deal.

van Wyk, J.-A. (2014). Apartheid South Africa's Nuclear Weapons Programme and its Impact on Southern Africa. *Brazilian Journal of Strategy & International Relations*.

Walt, S. M. (2018). *America Can't Be Trusted Anymore.* https://foreignpolicy.com/2018/04/10/america-cant-be-trusted-anymore/, foreignpolicy.com.

Weber, S. (1997). *Institutions and Change.* Westview Press.

Williams, P. D. (2008). Security Studies: An Introduction. *The Nuclear Disarmament and Non-Proliferation Regime*.

Yin, R. (2009). *Case Study Research: Design and Methods.* Applied Social Research Methods Series.