Explaining the Iran nuclear deal
A Case of Mutual Agreement After a Decade of Gridlock

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Abstract

This paper invites you to get a deeper understanding of the complexities of the Iran nuclear deal negotiations that have been widely discussed on political as well as on science arenas for the last 13 years. This paper endeavors to investigate how the negotiation process with underlying factors went on, what consequences and negotiation strategies were and are at stage. The research question is simple and at the same time complex, and aims to evaluate on - How can the Iran nuclear deal be explained through the lens of rational choice theory? The study shows that Iran’s incentive to comply increased as sanctions intensified in 2012, causing Iran’s oil net exports to fall, and Iran’s incitement to engage in a nuclear agreement with the west increased further with declining oil revenue in 2012. During the period 2006-2008 generous proposals were offered as well but did not result in a mutual agreement as rising oil prices, which incentivized Iran to choose the option of not engaging in an agreement, counteracted sanctions against Iran. On the other hand this paper aims to resolve that an agreement designed to incentivize the involved actors to comply has proven insufficient in itself as a strategy for reaching an agreement on Iran’s nuclear program. By adding the concept of Ripeness strikes this evaluation of negotiations to prove that a mutually hurting stalemate is not ended until there is a sense of way out as well as a deal design that incentivize all involved parties to accept the deal. Iranian costs for noncompliance increased enough to incentive Iran to accept the Joint Plan of Action in 2013, fully implemented in 2015.

Keywords: Nuclear deal, Rational Choice, ripeness, deal design, mutually hurting stalemate (MHS), ZOPA-model.
# Contents

Chapter 1 ................................................................................................................................. 4
  1.1 Introduction........................................................................................................................... 4
  1.2 Aim of the study and relevance ............................................................................................ 5
  1.3 Research problem and research question ............................................................................. 6
  1.4 Limitations ............................................................................................................................ 7

Chapter 2 ..................................................................................................................................... 8
  2.1 Previous research: Approaches and perspectives on the Iranian nuclear deal ....................... 8
  2.2 Proposed solutions for the nuclear dispute and research gap ............................................... 10

Chapter 3 ................................................................................................................................... 13
  3.1 Research strategy and case study design .............................................................................. 13
  3.2 Material ................................................................................................................................. 14
  3.3 Methodology, method and operationalization ....................................................................... 15

Chapter 4 ................................................................................................................................... 19
  4.1 Theoretical Framework ........................................................................................................ 19
    4.1.1 Ripeness: Mutually Hurting Stalemate and Way Out ...................................................... 19
    4.1.2 Deal design: ZOPA-Model ............................................................................................ 24

Chapter 5 ................................................................................................................................... 29
  5.1 Introduction to analysis ......................................................................................................... 29
    5.1.1 Asymmetrical sanction costs and different factors of measuring hurting stalemate ............. 30
  5.2 Analysis of Ripeness ............................................................................................................. 32
    5.2.1 Period 1: 2002 ............................................................................................................... 33
    5.2.2 Period 2: 2003-2005 ...................................................................................................... 35
    5.2.3 Period 3: 2006-2008 ...................................................................................................... 38
    5.2.4 Period 4: 2009-2013 ...................................................................................................... 42
  5.3 Analysis of Deal Design ........................................................................................................ 50

Chapter 6 ................................................................................................................................... 54
  6.1 Alternative explanations ........................................................................................................ 54
  6.2 Conclusion ............................................................................................................................. 55

References .................................................................................................................................. 57

Appendix ..................................................................................................................................... 61
Chapter 1

1.1 Introduction
At the end of 2013 diplomats from Iran and six world powers called P5+1 (the permanent members of the UN Security Council – the United States, the United Kingdom, Russia, France, and China plus Germany) agreed to start an interim process towards reaching a deal regarding Iran’s nuclear program. Initially they decided that the deal should slow down Iran’s capability to build nuclear weapons. Likewise the international sanctions on Iran’s economy to get lifted. This was a significant shift in almost 35 years of diplomatic deadlock due to distrust and suspicion. The Iran nuclear deal framework was a preliminary framework agreement reached in 2015 between Iran and P5+1. According to this framework, Iran would redesign and reduce its nuclear facilities, and accept the Additional Protocol, International Atomic Energy Agency safeguard agreement, in order to lift all nuclear-related economic sanctions, freeing up tens of billions of dollars in oil revenue and frozen assets. Considering that Iran has been isolated for more than three decades, the nuclear deal would herald a new chapter in global governance and the relationship between Iran and US.

This study is motivated by the fact that more than a decade of nuclear gridlock between Iran and the West that seemed to be unchangeable, ended with a successful agreement. This utilizes the uniqueness of the case and importance to understand what factors determines when this type of deal is, or is not, agreed upon.

Iran had pursued a nuclear program for decades and the ambition for nuclear energy and weapons had, as a result, continually challenged the international community. This paper sets out to address the areas related to Iran’s nuclear preferences and the responses from the international community together with the views from different scholars on the field of Political Science. It further presents an overview of what has been written on the topic and what different perspectives and approaches that exist on the nuclear deal itself and the reasons behind it.

1 Security Council, UN Resolution 2231, 2015.
1.2 Aim of the study and relevance

This study will examine and contrast unsuccessful nuclear proposals with the final nuclear deal to analyze causes of failure and management. In doing so, this study has three main aims. First, the paper will explain the outcome of the nuclear deal from a rational choice institutionalist perspective, which produced mutual agreement among all involved parties after more than a decade of failed negotiations. Second, showcase how the combination of two game theories “deal design” (which highlight the basic terms) and “ripeness theory” (which highlight the timing issue), can be used to understand the Iran nuclear agreement. And thirdly, analyze the operation of the underlying Iran-US strategies, factors and circumstances that explain the outcome of the nuclear deal.

Earlier research written by Sebenius and Singh (2012) have developed a game theoretic framework, outlining a model for evaluating the likelihood of an agreement given the criteria proposed for sealing a deal between the US and Iran on the nuclear program. As Sebenius’ and Singh’s paper was published prior to the Iran nuclear deal of 2015, a gap between theory and empirics exists which this study will try to fill. In doing so, this study adds to previous research (that has speculated about how a successful nuclear deal might look like) by choosing theories with greater explanatory power, which in turn clarify the actual outcome (empirics).

Most studies perceive the design of a proposed deal as the key to a successful resolution of dispute such as Sebenius and Singh. On the other hand, it has been a growing focus on another important key for resolution, which deals with the timing of efforts. Frequently states are willing to resolve their conflicts when means for attaining a suitable outcome face obstacles and costs appear to be tough and challenging. When the time is ready, states attempt to seize a mutual deal, which were not attractive earlier. Scholars have been saying that ripeness of time is the essence of diplomacy and gridlock is a great opportunity to reach settlement. To study the Iran nuclear deal from this perspective helps understanding the reasons behind parties’ instigations to negotiate and can probably explain the problems with reaching a mutual agreement throughout the gridlock.²

² Zartman, 2001, p, 22.
The Iran nuclear deal of 2015 indicates that mutual agreement on limiting Iran’s nuclear program is possible. While previous studies have speculated about the possible outcomes of different “deal-designs”, none have applied a game theoretic framework comparing the latest deal with previous proposals. Such a comparison can help to explain the game theoretical mechanisms that incentivize all involved parties to end up in equilibrium of mutual agreement, which shows the added value of this study.

The concept developed in this thesis can be applied and used to predict foreign policy behavior in other international negotiation gridlocks and the study thus add to a wider viewpoint within political science. It provides a framework for structuring strategic interaction, a way to capture the principles of the actors prior to the catastrophe and deduce likely behavior from them to identify key factors. This study further contributes to political science and in particular international negotiations by testing the validity of a generalizable theoretical framework that can apply to any negotiation with similar characteristics to Iran and US relations.

1.3 Research problem and research question

The research problem departs from the game-theoretic conception of institutional theory referred to the “Prisoners’ Dilemma” which points to the importance of repeated games as a means of establishing greater cooperation and mutual compliance among the participants in a game. Players are sanctioned or punished when they defect and are rewarded when they cooperate, and over time settle down to equilibrium of mutual agreement. Game theory can provide possible explanations for the collective decision-making failure during previous nuclear negotiations. Some previous rational choice scholars have focused on deal design as an explanation for mutual agreement and others have focused on the concept of ripeness, which means that both parties are ready to cooperate, which can depend on factors such as economic costs of noncooperation and subjective agony stemming from arms competition or perceived security threats. However, no study has combined those two approaches to provide a more comprehensive picture of how ripeness and deal design may be complementary and may have to present at the same time to incentivize states to agree.

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Basically, deal design misses the timing issue by not implying that perception of a ripe condition need to take place before the parties decide to approve a designed deal or considering designing a deal including adequate elements. On the other hand, the concept of ripeness misses the deal design part which incentivizes all actors to end up in mutual agreement. The second school (Ripeness) does not claim to have the whole answer but underscores that applicable answers are unproductive as long as the conditions are unripe. The first school (deal design) has focused completely on finding the right answer and the second school does not have the knowledge about the fundamental elements required to design a successful deal, but it recognizes their importance. Thus, the study of negotiation are complex and cannot be examined without both concept of ripeness and deal design. In fulfilling its aims, this study will address the following research question:

- How can the Iran nuclear deal be explained through the lens of rational choice theory?

1.4 Limitations

The original final setup, which ended up in a deal, was P5+1 together with the Iranian government, but this study will treat the negotiations in the same manner as Sebenius and Singh. This involves making the analytical simplification of viewing the negotiation as involving two monolithic parties, the US executive branch and the Iranian regime. The limitations of this study are that it cannot cover the whole P5+1 setup or the impact of leadership and be aware of the exclusion of the sources that can be extracted from Iran (Iranian official documents and media coverage) due to lack of reliability and objectivity of their empirics. Given the limited scope of the study, only four of nineteen proposals will be examined. This thesis will focus on the key elements of ripeness theory and the second element in the three-dimensional model provided by Sebenius and Singh, which concerns “deal design”.

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4 Zartman, 2000, p, 226.
5 Sebenius and Singh, 2011, p, 4-5.
Chapter 2

2.1 Previous research: Approaches and perspectives on the Iranian nuclear deal

Many scholars on this topic have united in their realist approach and analyze that Iran is pursuing a nuclear weapons capability. This approach is similar to the judgment of the US intelligence and the international community consensus, which means that Tehran is seeking nuclear weapon capability. Azaran emphasize in his case study that uncertainty with regard to security in an anarchic world will probably increase proliferation of nuclear weapons.

Dueck and Bahgat both remark that Iran has transferred its nuclear cooperation from western to eastern nuclear powers after the Iran revolution. They further stress that throughout the two regimes (monarchy and theocracy) Iran has found itself in a hostile and unpredictable environment, which encouraged the regimes to put effort into their nuclear programs and shaped their nuclear policies on the basis of these settings. Consequently, it could be argued that Iran’s nuclear ambitions have not changed fundamentally and regardless of the political orientation of the regime in Tehran, Iran is likely to pursue nuclear capability. Research on the preferences of Iran in this matter has found that they can be described as exogenous and static. In other words, it can be presumed that Iran’s preferences are security and consumption maximization.

Research have pointed out that the fact that Iran chooses the costly path of nuclear enrichment is not only due to peaceful purposes but it can also be explained by other interests such as deterrence of adversaries, project power, national pride and economic development.

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8 Azaran, 2005, p, 423.
10 Ibid.
In addition, a neorealist scholar assumed that Iran has security motivations for arming itself, because there are little logic behind the energy and economical explanations.\textsuperscript{13} Research have argued that Iran’s single full functioning reactor produces only 3% of Iran’s electricity, which is hardly an economic rationale for demanding self-sufficiency in fuel.\textsuperscript{14} In relation to this, the case study of Azaran adds that the IAEA (International Atomic Energy Agency) makes it hard and costly for states to develop undercover nuclear enrichment plants, thus despite costs, Iran prefer greater security, regional influence and national prestige.\textsuperscript{15} In addition, Bahgat further highlights the assumption of fixed preferences when pointing at Iran’s growing missile capabilities, initiated 1978 under the Pahlavi regime, which now is one of the worlds most advanced missile technologies.\textsuperscript{16}

Baktiari’s research study can add to the RC-approach by highlighting the importance of leadership, ideology and domestic balance of power.\textsuperscript{17} After all, the counterargument will be that Iran and US have a set of overarching preferences that do not change significantly over time. In relation to the realist/neorealist approach towards the nuclear deal, Baktiari’s assessment of the domestic challenges to President Rohani’s nuclear deal with the west, emphasize a sociological institutionalism approach. He claims that the nuclear gridlock is related to the splintered domestic politics of Iran. Baktiari assumes that the conservative party in the parliament, the security services and the revolutionary guard challenges Rohani’s nuclear policy. According to him the regime is not confronted by any serious domestic threats to its survival, because the current Iranian mindset is not revolution-oriented. Baktiari adds that Iran has a horizontal power sharing system, which complicates decision-making and implementation of new reforms. This study can increase the understanding over the domestic adversity to reach a deal with Rohani’s constructive approach. Baktiari underlines that Iran is a stable country and the US sanctions cannot dismantle the regime. He points out that the main lesson President Rohani learned from the first talks in 2003 was to involve US directly and bilaterally in the nuclear negotiations to increase the chances of reaching an agreement.\textsuperscript{18}

\textsuperscript{13} Fitzpatrick, 2006, p. 7.  
\textsuperscript{14} Ibid.  
\textsuperscript{15} Azaran, 2005, p. 424.  
\textsuperscript{16} Bahgat, 2006, P. 312.  
\textsuperscript{17} Baktiari, 2014.  
\textsuperscript{18} Baktiari, 2014, p. 4-6.
2.2 Proposed solutions for the nuclear dispute and research gap

It exists much research aligning with similar assumptions to the worldwide consensus, arguing that Iran’s nuclear decision-making mechanism departs from a rational choice/cost-benefit approach. The scholars mentioned above have not only attempted to explain the nuclear gridlock but also proposed solutions which are elaborated upon beneath.

“Iran's Nuclear Challenge” by Dueck and Takeyh raises the question on how the US can limit Iran’s nuclear motivations. They describe that US strategic elements are containment, rollback, non-entanglement and engagement. The authors claim that the advocates of rollback and engagement are unrealistic and an adequate strategy towards Iran would be containment along with bargaining, different setup, credible military threats and effective sanctions. According to the authors, a containment strategy is a system, which balances the power via political, military or economical means, and a rollback strategy (regime change) has ferocious and costly effects due to military intervention. Non-entanglement strategy is a matter of selecting costs or incentives, which urges the country to reconsider before an intervention, and engagement is a diplomatically or economically bilateral/multilateral interaction strategy. The authors assess that the proposed incentives from the EU would not prevent Tehran unless it is combined with sincere pressure and simultaneously suggests that US should stop demanding Tehran to suspend its enrichment activities before engaging in direct talks with them. They presume that even hardliners in Iran would choose economic profits, relief of all sanctions and peaceful nuclear technology over nuclear weapons, in case they get out more of the cost-benefit calculus. Consequently, the optimal bargaining outcome according to the authors would be total freeze of nuclear activities together with IAEA monitoring system and in case of a negative outcome (Iran reject the offer) the effort is necessary to put US in a better position.

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On the other hand, “Nuclear proliferation” by Bahgat discusses the IAEA’s efforts and recommends a settlement strategy that can please the concerns and demands of both sides. Bahgat argues that for reaching a potential consensus the international community must recognize a nuclear Iran, which has spent a huge amount of money on its nuclear program. According to the author, efforts to prevent trade with Iran is not sufficient, contrariwise the international community should increase the security and stability in the region and in return Tehran would reduce its incentives to pursue nuclear capability. A multilateral negotiation that involves carrots and sticks are desirable according to Bahgat who presume that Iranian leaders have become less ideology-oriented and keener to survive and gain benefits. Therefore, the international community could offer Iran a proposal with combination of cost and incentives together with security guarantees (instead of regime change threats) to reach a possible agreement that would remove suspicion over its nuclear program.

“Assessing Iran’s Nuclear Program” by Fitzpatrick has an offensive neorealist approach. Fitzpatrick claims that Iran’s main objective during negotiating with the UK, France and Germany (2003) was to buy time. One of his arguments is based on a speech in 2004 by Iran’s former nuclear negotiator Dr. Rohani, “Iran had agreed to suspend activities only in areas in which it did not have technical problems, and that in the calm diplomatic environment of the suspension, Iran was able to complete work on the uranium-conversion process”. This paper dismisses the argument that Iran would abolish its nuclear ambitions in exchange for a profitable deal. Fitzpatrick assess that Iran will gradually build up its enrichment capacity and suddenly when they feel threatened decide to build up a large nuclear arsenal in a short period of time.

Azaran on the other hand focus on NPT’s effectiveness to provide a platform so that states can initiate for negotiations and bargaining. He further notes that uranium enrichment is granted by the NPT and states that enrich uranium can either benefit from security promotions or empowering their bargaining power to achieve better terms in a negotiated deal.

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21 Bahgat, 2006, p, 323.
23 Azaran, 2005, p, 421-422.
Political scientists McFaul, Milani and Diamond sketched a win-win US strategy for dealing with Iran published in 2007. Arguing from a social constructivist perspective, implying that only a democratic Iran can prevent a nuclear threat that the country would otherwise pose to the US and other adversaries of Iran. Their hypothesis is that a change of administration/regime in Iran and a “governance” approach towards them including cross sector collaboration between the engaged countries could promote democratization and thus dismantlement of Iranian nuclear capability in the long run.\footnote{McFaul, Milani and Diamond, 2007, p, 27.}

Previous research has made important contributions to the understanding of the nuclear gridlock and the different actors’ interests, strategies and preferences as well as proposed joint solutions. However, the previous research shows an existing gap when it comes to applying different theories to compare proposals. Previous research also has a lack of discussion on what elements that are necessary when taking every party’s rational and equitable interests into account. Through applying both ripeness and deal design, this study will add theoretically to this research gap and provide an understanding of the timing and basic elements of the agreement in a way that previous scholars haven’t been able to showcase. Further, by contrasting previous unsuccessful nuclear proposals with the final deal this study will add methodologically and empirically to the research and present the different actors rational and interests throughout the process. This can help to understand the gridlock as well as the elements behind the final deal, as well as be useful when analyzing and trying to resolve gridlocks in other contexts.
Chapter 3

3.1 Research strategy and case study design

This study departs from a rational choice approach to institutions and governance, implying that underlying mechanisms, which produce a certain type of behavior, assumes states to have fixed preferences (e.g. security maximization). The rational choice framework assumes that preferences are exogenous and static, but incitements change as cost and benefits change over time due to changes in different economic variables. This thesis will deeply examine and analyze an aspect (nuclear deal) of a historical event (nuclear gridlock) to test historical explanations (deal design/ripeness) that perhaps can be generalizable to events with similar characteristics. This type of approach is called case study method and can be used to test rational choice theories applied in this thesis. The selection of case and theories controls what data from the Iranian nuclear gridlock are relevant to this case study.25

Content analysis is a commonly used and popular method within qualitative research technique. It is used to interpret meaning from the content of text data and adhere to a new understanding and paradigm. There are different approaches to how a qualitative content analysis can be done. This study applies a content analysis approach since it is using existing theory and empirics to identify key concepts or variables as initial coding categories.26 The paper has a deductive research strategy approach because it is theory testing in form of the design of the Iran nuclear deal proposal and its assumed effects on incentives as well as the condition of ripeness which is necessary for the timing of efforts.27 The goal of the deductive approach is to validate or extend a theory and can help to predict variables of interest or relationships between variables.28 The aim of the chosen deductive research strategy is to find explanations for a deal or a no-deal by combining the deal design with ripeness theory to test their relevance. As such, this study has an explanatory ambition. Additionally, this paper is going to clarify the concept of ripeness, demonstrate what can be covered and identify ways to measure ripeness.

25 George and Bennett, 2005, p, 17-18.
26 Potter and Levine-Donnerstein, 1999.
27 Blaikie, 2010, p, 94.
Through qualitative content analysis, this study will analyze and compare central demands in four proposals throughout the Iran nuclear negotiations and categorize them, in accordance with Sebenius and Singh’s different strategies that Iran and US are assumed to have in-or-out of a Zone of Possible Agreement (ZOPA). With other words four proposals will be examined and contrasted to see if they are ZOPA compatible (according to ZOPAs nuclear strategies and incentives).

3.2 Material

Diplomatic initiatives to resolve the Iranian nuclear issue have produced several proposals for a negotiated settlement or to build confidence between Iran and the international community. The material used in this study are former resolutions and proposals that the UN Security Council has adopted in response to Iran’s nuclear program in combination with official documents and proposals that have been produced over time. Based on this material, the study mainly utilizes a qualitative content analysis method as the ZOPA-model relies on predetermined categories representing the two main strategy orders of Iran and the US respectively. The content of events of every particular proposal period will be explained by public material, selected from primary sources such as UN-resolutions and secondary sources such as congressional research service that have recorded sanctions over time. Subsequently the effects of resolution etc. will be measured by looking at public data (e.g. TheGlobalEconomy.com) concerning the sanction costs/oil revenue for Iran or media that have reported occasions when US has expressed publicly their agony due to Iran’s destabilizing activities in the region. At the end this study will test the findings of each part with the theories to extract analyses.

It was unveiled for the international community in 2002 that Iran was having hidden nuclear activities and after that outbreak nineteen proposals have been swapped between Iran and different countries. This case study will focus on four of them to delimit the number of subcases within the larger case, which has been going on between Iran and US from 2003 to 2013. Iran submitted the first official proposal to the US government in May 2003 and until 2005 several proposals were exchanged between Iran and the EU-3.
This study will examine firstly the Iranian proposal of May 2003 because it was a formative moment in the Iran-US nuclear dispute and starting point of the instigation of the nuclear negotiations. Secondly it will examine China, Russia, US and EU3 proposal of 2006 because it was the birth of the P5+1 negotiation setup when US joined for the first time officially to pursue multilateral negotiations with Iran. The third proposal to examine is the Tehran Research Reactor “Fuel Swap” which was handed over in June 2009. The reason of choosing this proposal is because it was the first sincere talk after the presidential elections of US and a renewed nuclear policy towards Iran that switched from freeze to week restrictions. The last proposal this study will deal with is the Joint Plan of Action of fall 2013 which ended up in a mutual agreement in 2015. These proposals will be tested to see if they came close to the domain of ZOPA and if the ripe condition took place before the proposals were presented.29

The independent variables in this study are the concept of ripeness and the deal design, and the dependent variable is the outcome of the Iran nuclear negotiations/gridlock which is either a no-deal or a deal. They will be operationalized and put in perspective to each other through measuring ripeness over time and examine the four selected proposals to see if they are within or outside the Zone of Possible Agreement.

3.3 Methodology, method and operationalization
According to George and Bennett a case is defined as a part of an interesting scientific event, which a researcher select for analyses and intend to develop or test theory, considering similar or different causes of incidents throughout the historic event. Case study methods allow “comparison of a small number of cases” likewise “within-case analyses of single cases” however a combination of them creates a stronger causality.30

Since a case study allows investigating and focusing on one single case in depth the value of the method is that it results in a high internal validity. Case studies are suitable for identifying and capturing causal mechanisms, but the generalizability of the findings are relatively low since many cases are needed to find the same causal mechanisms.

29 Davenport, 2014.
30 George and Bennett, 2005, p. 17-18.
Important to note in relation to this choice of method is the selection bias and reliability issue. It is important to explain the selection process behind the proposals used in this study and how these are representative and relevant to compare. A possible validity problem identified in this study is that the limited scope hinders the study to investigate the composition of all parties involved in the negotiation. These limitations will be considered in all phases of the data collection and analysis of this study.\(^{31}\) King et al, argues that the collected data should be operationalized in a way that enables the next researcher to develop the same study and receive similar results, which is something this study will embrace.\(^{32}\)

According to Frieden the advantages with deduction is that it can "objectively" observe changes in the factors that might change preferences even though preferences are difficult to observe. Thus, this method can, according to Frieden, in a beneficial way predict changes in preferences since it links the preferences to the characteristics of the actor. The most important problem with deduction however is that the preferences deduced from prior theories can thus only be as good as the theories themselves.\(^{33}\) This case study is applying Frieden’s deduction as a method to identify the preferences and thus allow a deeper understanding of the different factors to the outcome of the deal. It is better to deduce preferences than to derive them from observations since preferences are not always visible, but strategies can easier be directly observed and can be derived from the historical strategies applied by the US and Iran since the 1950s.

Blaikie argues that the deductive approach has subtle realist ontology, implying that an independent, knowable reality is assumed to exist independently of the social scientist but cultural assumptions prevent direct access to this world.\(^{34}\) Thus, the underlying mechanisms that drive agents to act might be activated in some social settings, while not in others. Relating to this study, it is possible to assume that it is in the interest of all involved parties to maximize their interests given the constraints that all of them face in international politics (the absence of a world government, power asymmetries and uncertainty).

\(^{31}\) George and Bennett, 2005, p, 20-22.  
\(^{32}\) King, Keohane and Verba, 1994, p 3.  
\(^{33}\) Frieden, 1999, p, 39-76.  
\(^{34}\) Blaikie, 2010, p, 94.
In terms of epistemology this study departs from neo-realism, implying that knowledge of causes of observed regularities is derived from the preferences/mechanisms that produce them.\textsuperscript{35}

In the analysis section the signs of ripeness (key elements of ripeness) will be investigated and put into an illustrative diagram showing the ripe conditions during a specific interval (the scheme will be provided in form of an illustrative graph with a line drawn in an x/y-axis coordinate system, where outcomes ranging from high and low ripe condition are plotted along the y axis and the years approximately around 2003 to 2013 are plotted along the x axis). This study will apply a longitudinal design to measure condition of ripeness throughout the nuclear gridlock.\textsuperscript{36}

To operationalize ripeness the cost of stalemate for Iran will be measured over time by looking at sanction costs and oil revenue/export. Due to the scope of the study parameters such as unemployment and inflation rates will not be taken into account. Thus, the main focus on cost of stalemate will be on sanctions related to Iran’s energy sector because the energy sector stands for most of Iran’s revenue. Contrariwise, the cost of stalemate for US will not be measured by counting US security or military spending’s and Iran does not have the ability to impose sanctions on US either. The assumption is that Iran’s noncompliance with US demands has increased US fears of a possible future nuclear capable Iran which in turn threaten US hegemony/national security, and the US has therefore increased its actions and measures to prevent a nuclear Iran. The increased subjective “agony” felt by US administrations over the Iranian resistance to US demands will be treated as “hurting costs” due to stalemate. Agony can be measured in form of how much the US emphasize the importance of a non-nuclear Iran and spending on preventive measures such as posing sanctions and political pressure through international institutions. So increased sanctions and pressure indicates increased agony.

\textsuperscript{35} Blaikie, 2010, p. 94-95.
\textsuperscript{36} Zartman, 2001, p. 24.
Moreover, nuclear related statements from the respective government and the US military threat, as well as the Iranian security threat to US can add to the hurting stalemate. In this study Iran’s security threat to US consists of both nuclear capability and ballistic missile programs. Iran started to build ballistic missile capability, in the beginning of 2000.37

The agreement proposals will be interpreted to fit each categorized order of strategies, likewise the elements of ripeness will be interpreted or identified first and then the condition of ripeness will be measured.38 In order to operationalize the deal design, the proposed agreements from any of the negotiating parties will be analyzed and categorized along the graph representing the order of strategies for the US and Iran respectively.

Based on the combination of the methods mentioned this study will move one step further through observing the change over time in order to see if the logic of ZOPA (deal design) and ripeness can explain the end of intense gridlock, and therefore propose a longitudinal design that focuses on a variety of documented proposals and negotiations. It can further be argued that the framework can explain the gridlock and the outcome of 2015, which can be understood as establishing causality between the outcome and the negotiations. Moreover, the empirical analysis can show how the actual negotiations follow the theoretical logic of the ZOPA-model. If we see that negotiators adapt to each other overtime than ripeness is evolving.

37 Ghasseminejad, 2016.
Chapter 4

4.1 Theoretical Framework

This thesis utilizes Rational choice institutionalism (RCI) as a research paradigm as it relies on strong micro foundations (which sees states as unitary actors with exogenous preferences when they negotiate) to explain macro-outcomes, thus providing causal explanations for the Iran nuclear deal by tracing collective irrationality (gridlock prior to the nuclear deal) to individual rationality (utility maximization). According to RCI, institutions are defined by formal rules and incentives, causing agreement to be calculative rather than normative, as a sociological institutionalist would assume. According to Shepsle, institutions create structured induced equilibria through institutional rules (in this case the design of the Iranian nuclear deal), implying that certain outcomes will be more likely than others.\(^{39}\) The RC framework applied in this study emphasizes “deal design” and “ripeness”. These two theories discuss the phenomena of vital elements and timing. Drawn upon the game theories Sebenius’ and Singh’s ZOPA-Model will be used in the theoretical framework to examine what of the selected proposals fall into the area with most likely successful outcome and Zartman’s ripeness model will be used to measure ripeness during the nuclear gridlock. The institution wherein Iran and the US has been negotiating has been the P5+1 group but this study will focus on the bilateral relation between the US and Iran since no negotiation has been productive without the presence of the US.

4.1.1 Ripeness: Mutually Hurting Stalemate and Way Out

The concept of ripeness derives from the parties’ perception of a ‘Mutually Hurting Stalemate’ (MHS). MHS is associated with an imminent past or recently avoided catastrophe, which is built on the perception of parties getting locked in a conflict. When the stalemate is hurting (the pain do not have to be symmetric or for the same reason) and the chances for success are low, at this moment the parties try to find an alternative policy or a Way-Out (WO).

The catastrophe is the point where things suddenly get worse. The catastrophe provides a deadline and warns that the current discomfort can be severely enlarged if the parties’ do not take action. To avoid undesirable outcomes (status quo/no negotiation) the desirable outcome must be discovered which this study tries to find out in the zone of possible agreement according to the concept of deal design.

In game theory, MHS is seen as the changing beliefs of the parties’ understanding of the current situation and ripeness is a condition when the subjective perceptions take place. Therefore, if parties do not realize that they are stuck in a gridlock, a MHS has not occurred yet. And if the subjective perception of a gridlock is expressed regardless of the objective perception, the MHS exists. MHS covers objective and subjective perceptions, yet the subjective perception is more significant. This means that MHS is possible to objectively identify but it may take time before actors subjectively interpret the stalemate to be mutually hurting.

The second crucial element of concept of ripeness is WO (opening or new policy). It is not required that the parties identify a definite solution rather they only need to sense that a solution is likely and there are a willingness for finding a breakthrough. Without a sense of WO, the push related to the MHS would leave the parties with nowhere to go. Ripeness evolves when a sense of WO is accompanied with MHS, yet the initiation of negotiations between the parties needs to be managed through the parties themselves. The concept of ripeness is not predictive, meaning it cannot foresee when the condition is ripe, but it can identify the elements (MHS and WO) necessary for a productive initiation of negotiations. Searching for a ripe moment needs research and intelligence studies to trace subjective and objective elements. Thus, when parties in a conflict feel a MHS and are willing to find an opening or a new policy, the moment is ripe for negotiations. Figure 1 below is a model expressing the concept of ripeness according to Zartman.

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40 Zartman, 2001, p. 22.
41 Zartman, 2001, p. 23.
43 Ibid.
Several studies have found this concept appropriate and helpful to explain the positive opening of negotiations or their failure. They emphasize the importance of domestic political circumstances of ripeness and that change of leadership can have an impact on the subjective perception of a MHS.\textsuperscript{44}

The problem with the notion of hurting stalemate is that it sometimes can backfire. This means that hurting costs or increased pain can have reactions (side effects) such as increased resistance. In such case the counterpart might be a hardliner that wants to fight back and do not give up easily. In these cases, constrains on a state in conflict can worsen the image of the opponent which in turn reduce the chance of a settlement. Increased resistance absorbs more pain, which leads to higher costs, but further pain escalations can hasten the process of reaching a MHS in the long run.\textsuperscript{45}

\textsuperscript{44} Zartman, 2001, p. 25.
\textsuperscript{45} Zartman, 2001, p. 27.
Cases of resistant reactions to hurting costs emerged at first in the Middle-East, and in particular in Iran (the American hostage negotiations). As long as the hostages were worth more to Iran than releasing them and the US was seen as an oppressor, a negotiation initiation was pointless. Thus, negotiation with hardliners takes time because ripe moments are harder to find.\textsuperscript{46}

Be aware of the fact that not every negotiation is a result of a ripe moment and ripeness do not guarantee that every negotiation can end up in a successful agreement. For example a negotiator with no intention to strive for peace can see talks as a tactical move to rearm or ease the external pressure. Therefore it is not easy to know at first if the parties are entering sincere talks, even though the outset is the subject of the concept of ripeness and true or false intentions yet to be distinguished. In any case a sense of ripeness need to take place before a search for an agreed outcome starts and it does not mean that ripeness is identical to its outcome. Additionally, even if parties reach an interim deal only by MHS it is unstable and suspect to presume that the settlement is long-lasting, therefore the maintenance of the objective perception during the talks are necessary for negotiators to stay in the same direction.

In substantial cases the MHS falls in after a long period of conflict. Evidence showing that perception of a MHS arises whether states are at low level or high level of conflict. Therefore, if the problem is not treated at the early stage it will require a stronger force later on to start the negotiations.\textsuperscript{47} To ripen up and eliminate those challenges that have not been solved earlier, the opponent needs to intensify the enforcement until a stalemate is grasped, which improves the awareness of an imminent catastrophe. Experientially, when parties fail to negotiate and miss the right timing, they usually lose confidence to reach a settlement. And when a party is in pain due to hurting costs, the other party can choose to ripen and prepare a settlement formula or choose to position and ignore the hurting stalemate of the adversary. In worse case scenarios, parties fall back on their earlier views, blaming the other sides’ reluctance.\textsuperscript{48}

\textsuperscript{46}Zartman, 2000, p, 239.
\textsuperscript{47}Zartman, 2001, p, 28.
\textsuperscript{48}Zartman, 2001, p, 29.
Zartman points out that "the seeds of the pull factor begin with the WO that the parties unclearly perceive as part of the initial ripeness, but that general sense of possibility needs to be developed and fleshed out into the vehicle for an agreement, a formula for settlement, and a prospect of reconciliation that the negotiating parties design during negotiations". Zartman argues that during the talks, a deal that incentivize all parties’ need to be designed for reaching a desirable outcome, otherwise the condition remains truncated and unstable. In doing so, when the MHS pushes the parties to negotiate, the diplomats can provide tempting opportunities to pull out from an existing conflict. The push factor is replaced by the pull factor included with a settlement formula, which parties design during negotiations and the settlement formula or terms should be located somewhere in the realm of ZOPA, which will be explained in the next section. Thus, the concept of deal design is required to reach a desirable outcome.49

To establish whether ripeness exists in a conflict, a longitudinal design is desirable because it includes observations of the subjective expressions of agony (suffering), stalemate, and the hurting costs of further escalation, associated with the objective evidence of stalemate, empirics and material costs around and throughout a gridlock. In doing so, indications of MHS and expressions of a sense of WO will be taken into account.

Sebenius and Singh assume, as does the US intelligence community, that “Iran’s nuclear decision-making is guided by a cost-benefit approach”.50 This does not mean perfect rationality but rationality in an Iranian context that does not resemble US valuation of costs and benefits. It is assumed that the Iranian leaders calculate in a way that fits best to their interests and to know how they evaluate their interests (deal or no-deal), it can help to predict their behavior. The subjective interpretation of cost is a sociological element in this rational choice approach which means that although all leaders calculates cost and benefits some leaders will be more willing to absorb cost of sanctions. This could mean that Ahmadinejad, the former president of Iran (2005-2013) has been less sensitive to sanction costs than Rohani, the current president.51

50 Sebenius and Singh, 2011, P, 3.
51 Sebenius and Singh, 2011, p, 11.
According to Sebenius and Singh, effective enforcement (cost) or incentive (benefit) strategies can be identified via the following principles. One is that effective costs and incentives must have credibility. As such, a US military threat on Iran must be evident by action and it is not enough just by saying that a military option is on the table. Likewise an incentive is not credible when the US government proposes a sanction relief, while the Congress can stop that decision. Additionally, enforcement strategies with high efficiency are usually costly for one side or both parties. For instance the invasion of Iraq was costly for US but created fear that Iran could be next, or sanctions unrelated to the nuclear issue imposed on Iranian oil sector or foreign investors could damage Iran’s efforts to reach its objectives. Conclusively, effective costs and incentives must be proportional with Iran’s interests to create hurting stalemate, meaning that efforts to threaten Iran’s interests must be based on the knowledge of what the regime sees as its real interests (e.g. survival and economy).

4.1.2 Deal design: ZOPA-Model

The ZOPA-model highlights the absence of real alternatives (stalemate) and the high cost of the present conflict (pain). The ZOPA-model draws upon game theory and can be utilized to show how the nuclear deal proposals from 2003-2013 can be interpreted as products of a series of games ending in mutual agreement (equilibrium). There are three dimensions in the concept provided by Sebenius and Singh. According to the first dimension what is observable is what is on the negotiation table and that nuclear talks are usually managed through tactics such as direct or indirect talks including reasonable or exaggerated demands. States can apply negotiation tactics, such as tackling easy issues first, press hard for quick closure via deadlines or let the process proceed in a smooth way. The second dimension is deal design, which is trying to structure a sustainable agreement by maximizing interest for all parties. The third dimension is the setup of the negotiation parties, their interests, no-deal options and strategies that shape the cost-benefit calculus that can affect the probability of a deal option.

52 Sebenius and Singh, 2012, p. 77.
54 Zartman, 2001, p. 31.
The third dimension is in many ways similar to MHS and captures the elements of ripeness. Strategies that affect the perceptions to desire deal or no-deal related to this dimension is discussed in the concept of ripeness and the states interests will be further discussed in this section theoretically. The first dimension is not directly related to the framework of this paper because bargaining skills and tactics will not be examined. This study will look at the second dimension because ripeness is comparable to the third dimension and the benchmarks in the ZOPA-model (deal design) assures that if the negotiators remain within the framework a positive outcome is inevitable and therefore the first dimension as an independent variable becomes less necessary according to Sebenius and Singh’s findings.

Figure 2: Model for a successful outcome with the essential elements

The ZOPA-model assumes that the preferences of the US and Iran are exogenous, thus they do not fundamentally change even as political leadership varies over time. The application of the ZOPA-model highlights two key negotiation dimensions, or issues subject to bargaining between the US and Iran. First, the extent of Iran’s nuclear capabilities, which the preferred outcome for US is assumed to be an Iran with no nuclear capability while the preferred outcome for Iran is an arsenal of nuclear weapons. Second, the extent of economic sanctions, which the preferred outcome for US is maintenance of all sanctions while the preferred outcome for Iran, is relief of all sanctions. The strategic tools of US in the deal design to change Iran’s cost-benefit calculus are combination of sanctions and incentives. Enticing opportunities can raise the value to choose a deal instead of a no-deal, while not changing the value of the deal to the US, yet satisfying the Iran’s regime interests through incentives is more complicated.55

55 Sebenius and Singh, 2012, p, 73.
Searching for right policy that can have impact on Iran’s decisions is what distress international diplomacy. The costs and incentives are complicated strategic tools and should be managed by coordinated strategy to open up the ZOPA.56

Given the exogenous preferences of Iran and the US, this study will obtain a scheme of categorical proposals ranging from “maximum desired outcome of the US” and “maximum desired outcome of Iran”. The scheme is provided in form of an illustrative graph where outcomes ranging from max and min desired outcomes are plotted along a line drawn in an x/y-axis coordinate system. Any successful deal must be designed such that the incentives of all involved parties are taken into account, but without leaning too much in favor of one or the other party. The illustrative model below sketch the range of assumed options that each party can choose, and the “zone of equilibria” corresponds to the range of options that are assumed to produce mutual agreement (equilibrium). The model sketches preferred outcomes related to nuclear weapons development and preferred outcomes related to economic sanctions. This graphical analysis illustrates the effects on ZOPA of several cost-imposing and value-enhancing measures. Be aware of the fact that nuclear reactor fuel require to be LEU (Low Enriched Uranium) up to minimum 3 %. It is assumed that a country able to enrich uranium up to 3 % can achieve weapon grade enrichment within one to two years. As such the difference between the strong restriction (on the y-axis) and the week restriction are assumed to be between 2.5% and 5% enrichment.57

56 Sebenius and Singh, 2012, p. 82.
57 World nuclear association, Uranium Enrichment, 2016.
To motivate why sanctions are better for US and inferior for Iran, this study tries to demonstrate the tradeoff between sanction costs and security gains for both parties and showcase that the damage on Iran is about economic costs and security threats while for US the damage is about erosion of hegemony and security threats. Given above, it can be assumed that US in relation to Iran is pure security seeker and Iran in relation to US is security seeker and greedy.
According to the authors an Iran with prospects of developing nuclear weapons was the US assessment under the Bush and Obama administrations but their strategies towards Iran shifted from regime change to containment. US officials frequently and explicitly describe the nature of the Iranian threat to the US national security. Therefore, maintenance of all sanctions are better for US until the regime is overthrown or that the regime is not a national security threat to any further extent. Unlike the US, Iran denies procurement of nuclear weapons, but many spectators judge that Iran places a high priority on nuclear weapons capability given its failure to satisfy concerns voiced by the IAEA, and its history of hidden nuclear facilities. According to Sebenius and Singh, Iran’s main preferences are survival and the persistence of the “velayat-e faqih” system (guardianship of the religious jurist), thus, nuclear weapon capability would maintain these preferences. They assume that Iran might have learned from the history of a non-nuclear Iraq (invaded), a denuclearized Libya (also invaded), and a nuclear North Korea (not invaded).

Furthermore, different countries have different level of sensitivity when it comes to costs and benefits. It depends on whether a state is pure security seeker; or security seeker and greedy; or greedy and less security seeker. Countries dependent on oil revenue are usually more fragile to fluctuations of oil prices and oil export and trade embargos might also have different effects on countries depending on how much states seek security or territory.

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58 Sebenius and Singh, 2011, p. 3.
59 Sebenius and Singh, 2012, p. 60.
Chapter 5

5.1 Introduction to analysis

The analysis will first measure ripeness by tracing its elements slightly before the first proposal and then throughout the gridlock until the final deal. In doing so, it will be in line with the literature of Zartman, who assume that signs of ripeness takes place before a party in a conflict submit a sincere proposal. Ripeness theory is not predictive, meaning it cannot foresee the right time for a settlement, but it can identify the elements of timing. Ripeness is measured by tracing subjective and objective perceptions to identify indications of MHS and a sense of WO.\textsuperscript{60}

Additionally, official data available, primary and secondary sources has been used to conduct the analysis. Four significant periods have been elected, with proposals between 2003 and 2013 to evaluate if they are ZOPA compatible or not. Further, the analysis will continue with an analysis on evaluation of the Deal Design, imbued selected periods and proposals, and should be considered as a result of the state of ripeness, MHS and WO, for all parties involved. To finally reach the outcome of the Iran-US deal for more than a decade of disputes. As a final official statement in negotiations on table is the Joint Plan of Action from 2013.

The ripeness prognosis for the second period (2003-2005) is treated simultaneously because of US noninvolvement during the EU-3 negotiations and the first proposal in 2003 designed by Iran. In the third period (2006 to 2008) the US started to participate in the negotiations in late 2005. Iran changed its nuclear strategy in the end of 2005 and US changed its nuclear strategy in the early 2009. In 2006 for the first time a proposal designed by P5+1 was handed out to Iran. The new constellation and US debut together with the proposal is a critical moment which Zartman would call a sense of WO and the changed strategies of the parties in the conflict could affect their perceptions, which controls MHS.

\textsuperscript{60} Zartman, 2001, p, 24.
The procedure of the analysis of the fourth period (2009-2013) is motivated by the fact that 2009 was the year US changed three main strategies and a sense of WO was felt within the parties. Same year the hurting stalemate had expanded remarkably due to Iran’s crippling economy. The end of this procedure is motivated by Iran’s new strategy to rescue the country from an impending economic catastrophe and end of the story is the submission of Joint Plan of Action.

The analysis of deal design includes a description of the 2003, 06, 09, and 2013 proposals and examine if they are ZOPA-compatible. The analysis concludes that the 2009 deal was the first to be ZOPA-compatible but ripeness was lacking. Analysts and policymakers have offered various explanations for the failure to make progress towards a negotiated resolution to the nuclear dispute with Iran. A survey of different explanations would surface a multitude of barriers to a nuclear agreement, decades of hostility and estrangement, domestic politics on both sides, poor tactics, and missed opportunities. The question of whether there is any outcomes to the nuclear crisis upon which Iran and the US could both agree on, will be answered by using the theoretical framework provided by Sebenius and Singh.

5.1.1 Asymmetrical sanction costs and different factors of measuring hurting stalemate

The US adopted the Iranian Sanction Act (ISA) in 1996 to punish investments in Iran mostly over its nuclear program, yet both countries have suffered from financial losses in different ways. The reason why this study use different factors to measure hurting stalemate for each state is on the first hand that Iran has been the biggest loser due to isolation and exclusion from the international community as well as reduced access to the world economy. On the other hand US has inflicted sanction costs to itself by cutting access to the Iranian market. Still the sanction costs for US is a fraction compared to the sanction costs for Iran and this makes the hurting stalemate asymmetrical. 80% of Iran’s total export is oil, which stands for approximately 60% of its revenue. Thus, Iran is much more sensitive to the sanction costs than the US. 61

61 Giumelli and Ivan, 2013.
This study choose to focus on the sanction costs on the energy sector because it has the hardest effect on the Iranian economy. Iran’s economic losses (objective) due to introduced US sanctions and US subjective agony from fear of a nuclear Iran, are the substantial elements of objective and subjective hurting stalemate.

The US has not lost much economically from the stalemate but it has experienced increased agony since they fear that Iran comes closer to weaponization. Iran’s unemployment, high inflation, shrinking banking sector etc. are indicators of a declining economy which effects the possibilities of investment in military technologies. Since oil stands for the significant part of the Iran’s budget revenue, other economic factors will not be taken into account. Moreover Iran has no capability to sanction the US, so one can claim that the costs for US are primarily security related. The US has lost approximately $155 billion in export revenue to Iran, between 1996 (ISA was presented) and 2012 (sanctions reached its highest level) but those trade costs are only a fraction of Iran’s sanction costs.

Figure 4: Oil exports decline parallel with new sanctions enacted in 2002, 2010 and 2012


5.2 Analysis of Ripeness

Figure 5: Illustration of ripeness over time

The diagram above, figure 5, illustrates how ripeness correlates with the different proposals. In 2003 Iran’s perception of a hurting stalemate and willingness to find a WO emerged, but in 2005 while the US started to ripen Iran changed its perceptions, thus indicating a lack of MHS in this period. Between 2006 and 2008 there were many proposals but their red lines were diverging so none of these deals gave the parties incentives to strike a deal. Proposals were proposed before ripe conditions emerged and during this period hurting stalemate reduced for Iran and increased for the US with no indications of a MHS. The proposals of 2009 and 2013 were in the ZOPA-zone but in 2009 the moment for settling a deal was not ripe because Iran did not show a willingness to find a WO such as the US did. Finally, in 2013 both parties felt a sense of WO after indications of a MHS and instigation of a new negotiation, which ended in a deal, designed by the involved parties.

The notion of ripeness suggests that a MHS either appears under a brief occasion or a long duration (approx. 2002-2003 start of first Iran negotiations “low level of conflict” and start of final Iran negotiations 2012-2013 “high level of conflict”).
5.2.1 Period 1: 2002

After 9/11, the US embraced a zero-sum approach (regime change strategy) toward states supporting terrorism and according to the Bush administration the geopolitical setting had to change. Iran and the US cooperated throughout the invasion of Afghanistan (2001) and the level of conflict was at the lowest since the Iran revolution (1979). Despite the cooperation the US administration believed that countries able to support and provide terrorist groups with strategic weapons were Iraq, Iran, Syria and Libya. Iran’s support of Hezbollah and Hamas was known and hardliner in Washington pushed for regime change in Tehran. The rollback policy became obvious when President Bush expressed in his 2002 State of the Union that Iran is the “Axis of Evil” and the exposure of Iran’s concealed uranium enrichment facilities in 2002 was grist to the mill.63 Subsequently EU and the US perception on Iran converged following the confirmation of Iran’s hidden nuclear activities and a new trend of sanctions emerged in a stricter and exhausting way within the coming decade. Thus, UN and EU were not reluctant anymore to impose sanctions.64 The key sanctions added by amendments over time are present in the text.

Sanctions on Iran’s oil industry in 2002: Transporting Iranian Crude Oil amends ISA by sanctioning entities, except for transporting oil to countries that have received permission. Sanction will be implemented on participating foreign entities in joint oil and gas development venture with Iran after the effective date, first January of 2002.65

Figure 6: Revenue minus production cost of oil, percent of GDP (Oil revenue decrease)

Source of data: The global economy, Iran; Oil Revenue

63 Zammit, 2015.
64 Leslie, Marashi, and Parsi, 2014.
65 Katzman, 2016.
*Oil investment decline in 2002:* According to Moody’s Investor Services (one of three biggest credit rating agencies), Iran’s government debt was rated B2 (low rate due to significant political risk) in 1999, however Moody’s had to withdraw its credit ratings on Iran in 2002 because the ratings were not consistent with the US sanctions. This occurred when Iran was issuing its first international bond (Eurobond) after the revolution, signed by BNP Paribas. Because of the failure and to compensate its creditworthiness Iran’s Central Bank issued a 625 million Eurobond in 2002 to entice foreign investors.66 Without sanctions Iran could have the possibility to independently finance or invest in its energy sector or get foreign finance with better terms. Thus, it can be assumed that the financial sanctions are harmful to Iran’s economy because it omits foreign investors to invest in Iran’s outdated oil industry, which is dependent on investments. These obstacles have also forced Iran to sign bad deals with international oil companies and granted finance with high interest rates due to high risk.67

According to Zartman, during the absence of hope, if one party is feeling the pain, the other party can choose to ripen or position.68 From analyzing the material previous to 2003, it becomes clear that Iran was suffering due to imposed sanctions, but the US chose to take a hostile position. The sanctions (ISA) imposed had impacts on Iran’s oil export and in 2002 the lowest level was reached, according to the figure 4.

Sebenius and Singh would argue that those sanctions were efficient because Iran’s oil export declined, which is costly due to Iran’s oil export dependence.69 Until 2002 Iran tried to avoid its worst nightmare by keeping US and EU from adopting a common position regarding economic sanctions.70 After Moody’s decision, Iran’s investment opportunities was undermined and to compensate its hurting stalemate the Central bank of Iran tried to entice foreign investments by issuing bonds. Thus, the key elements of ripeness (MHS and WO) are absent in 2002.

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70 Boehner, 2006.
5.2.2 Period 2: 2003-2005

Shortly after the Iraq invasion in 2003, the administration in Tehran sent a proposal to President Bush aimed at resolving the nuclear issue and recognized its support of Hezbollah, Hamas and Israeli-Palestinian peace agreement, etc. In the same year Iran launched its first long range (1,300 km) ballistic missile with capability of carrying nuclear warhead and in 2004 they launched the next one with a range of 2,000 km.71

Iran asked clearly in the proposal for security assurances as a sign of fear for a possible invasion. US policymakers such as Colin Powell saw this as a breakthrough, but Dick Cheney neglected the Iranian proposal by saying that “we don’t speak to the evil”.72 Iran’s initiative to negotiate favored diplomacy in between 2003-2005, and Britain, France and Germany started to talk with Iran over its nuclear program. Despite the fact that the US dismissed the Iranian proposal, the regime freely postponed parts of its uranium enrichment in 2003. The negotiations started with IAEA regarding monitoring and verification mechanisms, signed the Additional Protocol under the NPT and allowed inspections, while waiting for the EU-3 to submit a proposal which incentive Iran to give in. Despite the efforts, Iran was accused several times of persisting its enrichment in 2004 and 2005, but shortly after agreed to stop it. In 2005 the Bush administration decided to join the EU-3 negotiations on the condition that Iran suspended its uranium enrichment prior to any talks.

*Entities sanctioned under the NP-Act or executive order:* In 2003, a Chinese, a Taiwanese and a Russian entity were accused for transferring missile technology. In 2004, 41 entities from Russia, China, Belarus, Macedonia, North Korea, UAE, Taiwan, India, Spain, and Ukraine were sanctioned for the same reasons. In 2005, 9 entities, from China, India, Austria and three Iranian entities, not nuclear or military related, were sanctioned.

*Penalties paid by banks for illegal transactions:* In 2004, UBS paid $100 million fine due to transferring US dollars to Iran. In 2005, ABN paid $80 million fine for not reporting the transactions to Iran’s Bank Melli.

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71 Iranwatch, 2012.
72 Gibson, 2015, p. 4-5.
Oil investments: Investments in Iran’s energy sector in 2004 were carried out by Japan, three projects by China worth $4.7 billion and a $178 million project by Brazil.  

Figure 7: Revenue minus production cost of oil, percent of GDP (Iran’s total oil revenue increased from 2003 to 2005)

It is assumed that Iran felt a huge pressure by US encirclement after the Iraq invasion with the motivation of possessing weapons of mass destruction and the same argument could be used against Iran to motivate the international community for a similar action. Sebenius and Singh would argue that the Iraq invasion was costly and this increased the credibility of an US military threat to Iran, which created a hurting stalemate. But sanctions that damage Iran’s defense system or nuclear program would not have negative effects on the oil industry and therefore do not directly harm Iran’s economy. Iran’s oil exports and oil revenue increased after 2003 and this could likewise depend on other factors such as foreign oil investments.

Thus, sanctions on entities and banks during this period could not maintain and sustain the hurting stalemate caused by the Iraq war. On the one hand a temporary hurting stalemate occurred, otherwise Iran would not have sent a proposal to avoid getting caught in a conflict with the US. On the other hand, according to Zartman, ripeness has to exist before offering a solution, so arguably the proposal was either handed out in a bad time or it was just a desperate act. Zartman would assume that the EU-3 negotiations were not a result of ripeness but an approach to ease the external pressure while pursuing activities or to compensate the hurting stalemate.

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73 Katzman, 2016.
74 Sebenius and Singh, 2012, p. 77.
75 Zartman, 2001, p. 22.
Yet, it is difficult to know the true or false intentions from the outset but the recurrent non-compliance to suspend uranium enrichment shows that the intention was to pursue nuclear activities, which confirms the assumption that Iran’s preferences have been fixed throughout the investigated period.

Another explanation after the exposure of Iran’s nuclear activities (2002) is that the catastrophe was not avoided by Iran and quick reactions took place to confront it before turning to a hurting stalemate. Also in game theory, a MHS does not occur if parties do not recognize a stalemate. It is not required that a proposal must have the right answer to be seen as a breakthrough, still the US chose to harden its position and thus the Iranian proposal is an incomplete element of WO. Presuming that a push related to MHS was developed in 2003, the absence of a sense of WO would leave the parties with nowhere to go and even if the time was ripe the talk with the EU-3 was not adequate, when Iran should actually negotiate with the party in conflict, which was the US.76

The overall assessment is that Iran’s red line indicated to be more flexible due to the costs imposed by increased international diplomatic pressure with the tangible threat of a military attack and contrariwise the US red line appeared to be more demanding. In the deal design analysis the Iranian proposal will be examined to see if the desirable outcome for the US was taken into account. Additionally, sanctions throughout 2003-2005 were mostly issued on foreign entities and usually unrelated to the oil industry but related to the missile program.

It could be interpret that the US confronted Iran’s missile industry with direct sanctions to delay the threat of obtaining advanced ballistic missiles to prevent hurting stalemate. According to the collected data the cost and incentives after 2003 were not proportional with Iran’s interests, given the improved Iranian economy. In 2005 when the US attempt to join the talks with the suspension demand (disincentive) the pressure and risk for invasion had reduced as well as politics inside Iran had hardened after a hardliner took over the government.77

76 Zartman, 2001, p. 23.
77 Sebenius and Singh, 2012, p. 54.
Thus, the US decision to come and sit on the table as a sign of WO was an inappropriate strategic decision when the perception of a hurting stalemate was absent on both sides.

5.2.3 Period 3: 2006-2008

ISA remained between 1996 and 2006 to decrease the revenue coming from oil, and got extended to 2016. The US and UN imposed multiple sanctions on Iran since IAEA found Iran not being compliant to its obligations in the end of 2005. Subsequently, the US organized its allies to financially isolate Iran by blocking its oil exports and consequently by increasing the cost of Tehran’s development of nuclear and missile capability.\textsuperscript{78} Iran resumed its uranium enrichment in January 2006 (after EU-3 could not incentivize Iran) and refused to allow more IAEA inspections, which motivated UN to adopt new sanctions.

In 2006 a new round of sanctions was approved by all members of UN Security Council regarding the export of material, technology and money transaction related to the nuclear industry and ballistic missile program.\textsuperscript{79} Three UN Security Council Resolutions that was significant was aimed to convince Iran to suspend its enrichment, to enlarge IAEA’s inspections and to reach for a settlement. \textit{Resolution 1737} (passed in 2006), 10 Iranian entities and 12 individuals related to nuclear and missile program were blacklisted. \textit{Resolution 1747} (passed in 2007) several more entities and officials from the Iranian military force was blacklisted. The resolution also banned Iran to export arms, but import was still allowed. \textit{Resolution 1803} (passed in 2008) had more restrictions on Iran’s nuclear related businesses and increased scrutiny on Iranian banks.

\textit{Entities sanctioned under the NP-Act or executive order}: 8 Iranian and 25 foreign entities in 2006. 12 Iranian banks, 16 Iranian entities, 20 foreign entities and 8 Individuals in 2007. 5 Iranian banks abroad, 7 Individuals, 16 Iranian entities, 4 foreign shipping firms and 12 foreign entities were sanctioned in 2008.\textsuperscript{80} Most of these sanctions are unrelated to the energy sector.

\textsuperscript{78} The Iran Project, 2012.
\textsuperscript{79} Laub, 2015.
\textsuperscript{80} Katzman, 2016.
**Oil investments:** China $20 billion, Japan and S. Korea $959 million and Norway $49 million in 2006. S. Korea $320 million, Holland and Spain $4.3 billion, Refinery finance by Korea, Turkey $12 Billion, Malaysia $15 billion and Belarus $500 million in 2007. Italy $44 million, Poland $2 billion, Vietnam Exploration and Production, Oman $7 billion, Croatia $40-$140 million, Germany petrochemical plant, Malaysia and China $1.5 billion in 2008.81

Furthermore, since 2006 a large number of foreign banks had declined their operations in Iran and several banks with close relations to Iran become more cautious after persuasion of the US treasury department.82 About $1.75 billion worth of bonds belonging to Iran’s Central Bank were frozen by court order in 2008.

Figure 8: Revenue minus production cost of oil, percent of GDP

![Figure 8](image)

Source of data: The global economy, Iran; Oil Revenue

Iran’s total oil revenue was following the same trend as previous period but started to fall in 2007. Iran’s oil export decreased in 2008 but the total revenue was compensated and even raised due to oil price shock in 2008. Therefore the percentage in 2008 is higher than previous years.83 Iran’s decline of trade between European companies after 2006 was almost compensated with increased trade with Asian companies as well.84

In 2006 Iran launched a missile ranging 4,000 kilometers. In 2007, the Pentagon confirmed that North Korea and Iran was cooperating in building long-range missiles and Iran was developing an intercontinental ballistic missile that could reach the US.

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81 Katzman, 2016.
82 Jacobson, 2010.
83 Smith, 2009.
84 Jacobson, 2010, p. 76-78.
The same year, Iran became the third most active state in combat-testing missiles. The international institute of strategic studies concluded that in 2005 and 2013 during the sincere nuclear talks Iran did not perform any "nuclear-capable missile launch", but from 2006 to 2012, when negotiations were not promising, they launched five missile tests per year. Additionally, from 2006 Iran took huge technical steps and reached 20 percent uranium enrichment.

Between 2006 and 2008 several proposals were exchanged, yet one meeting with the presence of the US and Iran was held in Geneva in the summer of 2008, with no further progress. It was assumed that the US’s efforts had delayed Iran’s activities and prevented them to obtain a nuclear bomb by 2008. The US precondition strategy (suspension before talks) was a cost for Iran in a way it made no-deal more feasible for them and US officials saw military attack as a better option than a deal, but the threats seemed not to worry Iran. Presumably Iran might evaluated the threats to be less credible when the US spokespersons frequently stated that a military option is always on the table while debating the pros and cons publicly. Other facts that made Iran feel safe was the location of their nuclear program that was safeguarded in harder and deeper places.

According to the data, sanctions had substantial impact on the economy, but not on Iran’s nuclear policy as several US policymakers did agree that greater sanctions could not prevent Iran from their ambitions. Sebenius and Singh claim that the pressure on Iran amplified from early 2006 to late 2008 with the Russian and Chinese coalition in the P5+1, but the outcome of multiple sanctions were not efficient enough to reduce the large gap between Iran-US red lines. It can be argued that the missed opportunity to bargain on the proposal of 2003 and the poor offer of incentives in late 2005 was the main reasons why Iran took the opposite way (20% enrichment).

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85 Iran intelligence, 2016.
87 Hope, 2012.
88 Jacobson, 2010, p. 76-78.
89 Sebenius and Singh, 2012, p. 56.
90 Abcnews, 2010.
91 Sebenius and Singh, 2012, p. 54.
In the previous period it was examined that MHS did not occur because US did not feel the hurting stalemate as Iran did. It was argued that while Iran was suffering from the costs, the US could choose to ripen and prepare settlement condition, but they choose to position and ignored the hurting stalemate of the adversary. Thus, the Iranian officials fell back on their earlier revolutionary views (1980s), blaming the other sides’ reluctance, and as long as high-enriched uranium was worth more to Iran, a no-deal was preferable.\textsuperscript{92}

As mentioned earlier, the hurting stalemate can have opposite effects on hardliners, such as increased resistance, and this does not change the fact that parties have fixed preferences and strategies can change. This paper argues based on Zartman that aggregated enforcement strategies by the US had worsened their image in Iran and Iran was ready to absorb more pain due to increased resistance. It can be argued more rationally that launching missile tests and enhanced nuclear development was to put pressure on their adversaries as response to the sanctions and military threats, and the consequences of increased resistance by Iran was encountered by increased pressure from the US. Thus, before it turned to a chicken race, Iran created ways to go around sanctions (exchanged EU market with Asian market) and avoided impending catastrophe.\textsuperscript{93}

Sebenius and Singh assume that Iran’s nuclear decision makers are rational actors, but claim that Iranian rationality does not look like the US estimation of costs and benefits. This means that Iran achieves its interests by adapting to the existing environment. Thus, it is important to understand when a no-deal is preferable it indicates that Iran’s interests are more achievable through that option.\textsuperscript{94} To change Iran’s perception the US needed to push for more constrains to return stalemate. But events such as the oil price shock in 2008 avoided a catastrophe that otherwise could happen due to aggregated sanctions. Other facts that can explain the lack of hurting costs are the sanctions that not directly target Iran’s main industry that generate its most national revenue. The data illustrates that the US initiated sanctions targeting mostly the missile and nuclear program. It can be assumed that the US’s purpose was to decrease its own hurting stalemate, because Iran’s fast growing nuclear technology and missile program was gradually causing agony.

\textsuperscript{92} Zartman, 2001, p. 29.  
\textsuperscript{93} Zartman, 2001, p. 27.  
\textsuperscript{94} Sebenius and Singh, 2011, p. 11.
Since MHS results from a combination of objective and subjective elements, the Security Council embargo will be examined as a possible factor causing hurting stalemate.\(^{95}\) The multiple sanctions could have made Iran to keep its seats around the negotiation table but the scales of sanctions was not proportional to Iran’s interests and failed to create enough hurting stalemate. Additionally, the ongoing foreign oil investment could probably boost or compensate the hurting costs and further meetings between Iran and the US was not arranged due to lack of a sense of WO. To conclude, ripeness was unlikely to occur between 2006 and 2008 due to lack of MHS and WO. Moreover, the lack of a proposal, which could change Iran’s incitements could be seen as one of the reasons Iran favored the no-deal option and the way to nuclear capability was hard but feasible. According to Sebenius and Singh, the US’s failure to offer a satisfactory deal and week cost-imposing efforts improved Iran’s no-deal options.\(^{96}\)

5.2.4 Period 4: 2009-2013

In 2009 the US predicted that Iran could become weaponized as early as 2010, which indicates that the US felt agony in 2009 due to a perceived imminent nuclear threat from Iran. The Iranian development of intercontinental ballistic missiles probably added to the fear that Iran would soon be able to arm intercontinental missiles with nuclear warheads. Prior to 2009 Iran had only long distance missiles capable of reaching Europe, but with the new long distance missile tested in 2009 Iran could launch attacks against the US’s soil. In 2009, Iran tested its first orbital rocket, which could be used to launch satellites.

The US Defense Secretary said in 2009 "the intelligence community now assesses that the threat from Iran's short- and medium-range ballistic missiles, such as the Shahab-3 is developing more rapidly than previously projected. This poses an increased and more immediate threat to our forces on the European continent, as well as to our allies".\(^{97}\)

Zartman argues that hurting stalemate can lead to an impending catastrophe, which can only be prevented by a sense of WO. The change of strategies in the Obama administration can be seen as a breakthrough. Firstly they wanted to reassure Iran that

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95 Zartman, 2001, p. 31.  
96 Sebenius and Singh, 2011, p. 20.  
97 Ghassemnejad, 2016.
their strategy was not regime change anymore and a negotiated deal was their intention.
Secondly, their only meeting during the old administration in 2008 already weakened the
precondition, but now they officially trashed the precondition. Thirdly, the proposal of
2009 (fuel swap) was accepted and allowed Iran’s low-enriched uranium to get swapped
with high-enriched uranium for medical use. This was an indication that the US was
prepared to accept some Iranian enrichment activity. The effect of the latest diplomatic
approach was that it changed Iran’s perception about the US to be more flexible. The
effects of reassuring Iran that the regime change strategy is removed could have
undermined the credibility of a military attack as a threatened cost to Iran, and thus not in
favor of the push factor that depends on hurting stalemate.\textsuperscript{98} Thus, the combination of
new sanctions and reduced military threat could have compensated the push factor caused
by economical pressure.

According to Zartman several ripeness studies emphasize the importance of domestic
political circumstances for ripeness and that change of leadership can have an impact on
the subjective perception of a MHS. In the case of the fuel-swap deal the domestic
polarization in Iran did affect the level of hurting stalemate and the new leadership in the
US expressed their agony a few times as an indication of subjective perception of the
raising hurting stalemate. Iran’s position continued to harden on the nuclear issue and the
rejection by Tehran of its own 2009 proposal was not good signs of ripeness. To contain
Iran, US started to obtain new sanctions and visible military activities.\textsuperscript{99} According to
Sebenius and Singh an Iran with nuclear weapon would severely harm the influence and
credibility of US in the region.\textsuperscript{100}

Previous research by Dueck suggested how the US could shape Iran’s nuclear strategy.
They argued that regime change is not rational and a suitable strategy would be
containment along with bargaining, credible military threats and efficient sanctions. They
recommended removal of the precondition before talks and believed that hardliners in
Iran would choose economic prosperity and peaceful nuclear technology over nuclear
weapons. And even if Iran rejects the bid, the US will be in a better position.\textsuperscript{101}

\textsuperscript{98} Sebenius and Singh, 2012, p. 85.
\textsuperscript{99} Sebenius and .Singh, 2012, p. 64.
\textsuperscript{100} Sebenius and Singh, 2011, p. 15.
\textsuperscript{101} Dueck and Takeyh, 2007.
This description fits best with Obama’s nuclear strategy towards Iran, which did remove the precondition in 2009 and accepted low enrichment. The ripeness-ZOPA model explains Obama’s strategy as a way to increase the hurting stalemate for Iran. Zartman suggest parties to be available until ripeness occurs.102 During the lack of ripeness the US started to identify problems and advised new strategies to P5+1. The first round of negotiations with the new administration collapsed in November 2009 and sanctions became the core stone of US policy aimed to change Iran’s nuclear calculus.103

Entities sanctioned under the NP-Act or executive order: 11 foreign entities in 2009 and 16 foreign entities in 2011. Several firms related to energy, Swiss entity, Total (France); Statoil (Norway); ENI (Italy); Royal Dutch Shell; and Inpex (Japan) in 2010. Dutch bank, Standard Chartered, several foreign entities related to oil (China, Singapore and UAE), 20 Iranian banks and governmental companies (Switzerland, Hong Kong, Malaysia, UAE and NIOC) in 2012. Several Iranian firms and person (Execution of Imam’s Order “EIKO” and 37 entities under its umbrella) and foreign firms related to oil business were banned (Sudan, China, Belarus, and Venezuela).104

Oil Investments during the same period was: India and Venezuela $8 billion, Sinopec $6 billion, S. Korea $1.4 billion, S. Korea and Italy $4 billion in 2009. China $4.7 billion in 2010 and Russia $1 billion in 2011.105

Figure 9: Revenue minus production cost of oil, percent of GDP

Source of data: The global economy, Iran; Oil Revenue

103 Khajehpour, Marashi, and Parsi, 2013.
104 Katzman, 2016.
105 Katzman, 2016.
Despite the heavy sanctions the nuclear program was still expanding and the US therefore advised the Security Council to adopt new round of sanctions. To decrease tensions, Iran agreed with a new proposal (2009) similar to the fuel swap. The US ignored Iran’s attempt and continue pursuing the UN sanction of 2010. The resolution of 2010 prohibits companies to operate in Iran’s energy sector, issuing insurance for shipping or export credits and financing. These sanction targets indicated a new trend of constrains proportional to Iran’s main resource of living. Resolution 1929 (adopted on June 2010) “was key for its assertion that the energy, financial, and other sectors of the Iranian economy support Iran’s nuclear program, as well as for imposing strict limitations on Iran’s development of ballistic missiles and importation of major combat systems”. Deputy Secretary of State stated in 2010 that a nuclear Iran threatens the security and stability of regions important to the US’s interests as well as the global economy and it can decline the credibility of the UN and damage the work of institutions such as the NPT.

Research and intelligence are required to understand why Iran and the US in 2011 was not ripe for a negotiated settlement. Negotiations in early 2011 in Istanbul appeared without a successful outcome due to Iran’s preconditions. In 2012, the US adopted new round of sanctions on Iran’s central bank which is the main channel to collect the oil money and by cutting it, EU stopped Iranian oil purchases and the US persuaded Japan, S. Korea, etc. to reduce their oil purchase as well. After 2011, EU almost blocked its whole trade with Iran’s energy sector.

The US hurting stalemate probably peaked in 2012. Both Bush and Obama administrations had already stated that they prefer a military option than to handle with a future nuclear Iran. In 2012 AIPAC conference, Obama specified, that to prevent Iran from building a nuclear bomb he will use all options mentioned in containment strategy, which balances the power via political, military, economical means and he stated:

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106 Gibson, 2015, p. 10
107 Burns, 2010.
108 Adler, 2011.
“That includes all elements of American power: a political effort aimed at isolating Iran, a diplomatic effort to sustain our coalition and ensure that the Iranian program is monitored, an economic effort that imposes crippling sanctions and, yes, a military effort to be prepared for any contingency.” He further declared that their policy have been and will be to prevent Iran from reaching nuclear weapon capability, and they will take the military option when it comes to defend the US and its interests.110

The sanction in 2010 proved later on to be one of the most efficient enforcement strategies that have been adopted since the beginning of the gridlock. Many non-US firms ended their business in Iran after 2010 and almost all energy related deals to Iran became subject to sanctions.

According to Sebenius and Singh one of the things that bothered US was that Iranian proposals seem to be uncompromising and the Moscow talks in 2012 was a clear evidence.111 Controversially until 2012 the construction of missile defenses around the region perceived to be prepared for a nuclear Iran, which even undermined the credibility of a possible US attack, but from autumn 2012 a chain of military maneuvers in the region with the intentions to change Iran’s perceptions was operated.112 The effect of a new round of sanctions (2012) was further isolation from the international community and to dismantle Iran from the international banking system.

Sebenius and Singh believe that US was targeting the interests of the regimes nuclear and missile programs, which is globally supported and threatened directly the interests of the regime by imposing severe sanctions on Iran’s oil exports in 2012. The consequences were serious fall of Iran’s oil exports that stood for 70 percent of its budget back then.113

The figure below show how Iran’s net oil exports decreased as sanctions were intensified and further incentivized Iran to comply with the comprehensive joint plan for action proposed in 2013 and agreed upon and fully implemented in 2015.

110 Obama’s AIPAC speech, 2012.
111 Sebenius and Singh, 2012, p, 63.
112 Sanger and Schmitt, 2012, p, 64.
113 Sebenius and Singh, 2012, p, 78.
Since more powerful sanctions were imposed on Iran in 2011 a number of economic variables have changed the Iranian incitement to comply with the agreement proposed in 2013. Since more powerful sanctions were imposed on Iran in 2011 a number of economic variables have changed the Iranian incitement to comply with the agreement proposed in 2013. Iran’s sanction costs was $160 billion in oil revenues from 2012 to 2014. In 2011 Iran lost $60 billion in investment in the energy sector as foreign investment companies pulled out of Iran. Between 2011-2013 Iran’s exports of crude oil fell with 60%, from 120 billion dollars in 2011 to around 35 billion dollars in 2013.

In late 2012 sanctions on Iran was showing concrete results and Iran was facing real economic crisis. Iran desperately wanted sanctions relief and this caused an opening in early 2013. The new Iranian administration in summer of 2013 came into power with the strategy to seek sanction relief and boost Iran’s economy. The West saw that as a fresh opportunity to kick start a new round of negotiations. Negotiations with the P5+1 and Iran started on October 16 in Geneva and according to officials, “it was apparent that change was in the air”.

Iran agreed at the first meeting to sort out all their disputed issues with the IAEA which was a positive outcome. This critical step moved the parties to set out the framework for an interim nuclear deal (JPOA), on November 24, 2013.

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114 The Geneva interim agreement, officially titled the Joint Plan of Action, was a pact signed between Iran and the P5+1 in Geneva, Switzerland, on 24 November 2013. The JPA and the negotiations under it which followed, led to an April 2015 framework agreement and then a July 2015 final agreement, the Joint Comprehensive Plan of Action.

115 Katzman, 2016.

116 Ibid.

117 Gibson, 2015, p. 15-16.
Two major events that occurred in 2010 and 2012 was the intensified sanctions, but in 2011 Iran could absorb the costs due to stable oil prices. In 2012 oil prices declined, causing a deepening of the hurting stalemate for Iran. The fact that the economic impact of the sanctions became increasingly hard to absorb, exemplified by the 60% decline in oil revenues between 2011 and 2013, which may have given Iran incentives to adopt to US’s demands. The first sense of WO after years, appeared in the end of 2012 when Iran was desperately in need of sanction reliefs.

During this period the US feared that sanctions would not be enough to prevent Iran from retaining nuclear capability. In 2011 the sense of WO died when Iran left the negotiating table because P5+1 refused to accept Iran’s right to enrichment, and to drop all sanctions. The P5+1 group insisted that Iran must first show its goodwill by taking confidence-building measures such as agreeing to ship out the main bulk of its enriched uranium. In the midst of these demands, Iran left the negotiation table and the sense of WO was reduced, and sanctions hardened. The general conclusion after 2011 and 2012 talks was that Iran is not ready to compromise and enforcement strategy is the only way to make them comply. Later on, it was assumed that Iran started to view a deal as a superior option due to hurting stalemate, but the independent variable, ripeness, was not present to produce the dependent variable (deal). In addition, the other independent variable, ZOPA-compatible deal design was not present either.

To summarize, the US applied a new approach in 2009, which meant a brake with the hardline strategies of Bush, hence a sign of WO for the US but not for Iran. The Obama administration agreed to allow Iran to have weak enrichment of uranium and signaled a sense of WO, but the hardliner administration in Iran would not change its strategies until late 2012 when Iran demanded sanction reliefs, due to the increased hurting stalemate.

During spring 2013 negotiations were enacted and taken over by the new administration that came to power during summer of 2013. A new strategy was taking shape with the new administration, since Rohani decided that the primary goal should be to get rid of the sanctions and boost the economy which created a sense of WO for both the US and Iran since the US would allow weak enrichment while Iran was prepared to accept concessions in order to get sanction relief and enhance economic growth.
There was a gradual increasing MHS at the end of the gridlock. The hurting stalemate for Iran increased when the US imposed oil related sanctions and military threats to change Iran’s perception of hurting stalemate, as well as the hurting stalemate for US increased when Iran was developing its nuclear and missile programs, which affected the US perception by creating agony.

Figure 11: Illustrates under what conditions hurting stalemate is mutual

Figure 11 illustrates that the MHS emerged in 2013 when the US and Iran’s subjective and objective perceptions of hurting stalemate overlapped and converged (peaked) as well as both sides felt a mutual sense of WO at the first meeting in October 2013. As enforcement strategies shift to the right on the horizontal axis and nuclear strategies shift downwards on the vertical axis, stalemate becomes more hurting for the US and less hurting for Iran, and vice versa. According to the empirical analysis the reduction of oil investments and oil payments from 2009 to 2012 had a stagnation effect on the Iran economy, which in turn pushed the US and Iranian graphs towards each other. Accordingly, to finalize a deal the condition of ripeness and a ZOPA-compatible proposal need to overlap and converge as figure 5 illustrates.
Even if parties would have reached an interim deal only by MHS it would be uncertain to presume that the settlement could be sustainable and long lasting, therefore the maintenance of the objective perception (WO) during the talks were necessary for negotiators to stay in the same direction. Thus, when the MHS pushed the parties to negotiate, the diplomats provided enticing elements to pull out from the existing conflict. The push factor was replaced by the pull factor and the settlement formula (final deal), which parties designed during negotiations was located somewhere in the realm of ZOPA. Thus, the combination of ripeness as a precondition and ZOPA-compatible deal design was required to finally reach a successful outcome.118

5.3 Analysis of Deal Design

Figure 12: Illustrates where the four proposals are located in association with the ZOPA

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As mentioned earlier, deal design ignores the fact that ripeness is a precondition that must emerge before designing any deal for reaching a settlement. Contrariwise the ripeness theory does not have a comprehensive formula for the involved parties to finalize an agreement. Thus, deal design concentrates totally on creating the best recipe by a combination or correlation of strategies. The strategies in the Sebenius and Singh model are the level of tolerance for allowing uranium enrichment and a controllable scale of sanction relief that will be used as incentives to get more concessions and bargaining power.\textsuperscript{119} For example when a party comply with other party’s demands in this case low-enriched uranium, the demanding party can take concessions by releasing parts of the existing sanctions.

**Iranian proposal of 2003**\textsuperscript{120} (See the terms of the proposal in appendix)

The Iranian proposal of 2003 demanded relief of all US sanctions, implying that the proposal in this code scheme is categorized as the least preferred outcome for the US and most preferred outcome for Iran. Thus, the proposal is not located in the ZOPA-zone. From the proposal we can see that Iran demanded access to peaceful nuclear technology, but the US demanded suspension of Iran’s nuclear program, implying that the deal design would be located mid left in the diagram, that is outside the ZOPA-zone.

**China, Russia, US and EU3 proposal of 2006**\textsuperscript{121} (See the terms of the proposal in appendix)

The Russian, American and Chinese proposal of 2006 demanded that Iran would suspend all enrichment and reprocessing related activities, which places the proposal under the category “freeze” on the preferred strategy graph in the above model. Thus, the proposal does not fit in the ZOPA-zone, leading to no agreement. Furthermore, P5+1 offered to relief sanctions on telecommunications, civil aviation, and high technology and abolish the UN sanctions which according to the interpretation of this paper implies that the deal can be placed right above the ZOPA-zone. The deal design is closer to ZOPA than previous deal designs but not close enough to give both parties incitements to agree on a sustainable deal.

\textsuperscript{119} Zartman, 2000, p. 226.
\textsuperscript{120} Davenport, 2014.
\textsuperscript{121} Ibid.
The fuel swap proposal of 2009 and the revised proposal - Tehran Research Reactor\textsuperscript{122} (See the terms of the proposal in appendix)

In 2009 Iran demanded reliefs on nuclear related sanctions, which the P5+1 agreed upon, and this paper has interpreted the proposal as a deal design compatible with ZOPA. Iran promised to enrich uranium up to 4\% and outsource the rest of the enrichment to Russia. This implies that the deal should be located at mid-center in the ZOPA zone.

The fuel-swap proposal was initially accepted by both parties, indicates that the deal was ZOPA-compatible since the US agreed to only have weak restrictions on Iranian enrichment but after preliminary agreement, Iran delayed its response to the IAEA and P5+1, and changed its demands after the proposal, partly due to the domestic opposition to the proposal in Iran (the domestic opposition demanded relief of all sanctions). This indicates that the deal was ZOPA-compatible but ripe movement did not exists yet, according to the analysis of ripeness in this period. Iranian officials publicly suggested alterations to the fuel swap proposal, including: staggering the export of Iran’s LEU over the course of a year or transporting 400 kilograms of LEU to Iran’s Kish Island to exchange for TRR fuel. These proposals, however, undermined or eliminated the confidence-building nature of the export of the bulk of Iran’s LEU. Tehran began to increase the enrichment level of some of its LEU to 20\% in February 2010, ostensibly for TRR fuel.\textsuperscript{123} To negotiate when there is no ripeness makes it likely that a deal will not be settled even if the deal design is in the ZOPA-zone.

The Joint Plan of Action (2013)\textsuperscript{124} (See the terms of the proposal in appendix)

In the first phase Iran and P5+1 were obliged to take measures to comply with the interim agreement. Compliance of the JPOA resulted in a comprehensive solution which was the Iran Nuclear Deal. The Joint plan for Action demanded that Iran was to convert half of its stockpile of uranium enriched over 20\% in exchange for repelled sanctions on various sectors and relief of US attempts to further reduce Iranian oil exports.

\textsuperscript{122} Ibid.
\textsuperscript{123} Ibid.
\textsuperscript{124} Ibid.
Intensified US sanctions on Iran in 2012 caused Iranian oil exports to fall, while the price of crude oil that started to drop in 2013 further reduced Iranian oil revenues. Thus incentivizing Iran to comply with the joint plan of action that in terms of agreement design is located in the ZOPA-zone according to the rational choice model.

The JPOA is located closer to the center of the ZOPA due to approval of week nuclear restrictions and relief of all nuclear related sanctions, which can be assumed to be more sustainable than the previous proposal in 2009. Thus, an agreement design initiated in 2013 which incentivized Iran and US to comply in combination with MHS and sense of WO, and the reduced oil net exports that contributed to Iran’s compliance was finally agreed upon in consensus in 2015.

The 2015 Joint Comprehensive Plan of Action distinguish itself from previous deal proposals in terms of agreement design and differences that affect the incentives of involved parties. The study shows that the 2015 agreement distinguishes from previous proposals by offering Iran to develop peaceful nuclear technology while most but not all sanctions on Iran are lifted in return. The previous proposals that this study have analyzed, except fuel swap proposal, demanded either that all sanctions should be lifted or that Iran freezes its nuclear program, which implies that those proposals falls outside the ZOPA-zone. The fuel-swap proposal should have been successful given that it was located on the ZOPA-zone but the lack of ripeness prevented agreement. Another explanation besides the lack of ripeness why proposal of 2009 was unsuccessful it can be that the proposal is located on the border of the ZOPA zone in figure 12.

To link up the analysis, the finding is that the framework used in this paper, which combines Zartman’s ripeness model with Sebenius and Singh’s ZOPA-model, can be used to explain why gridlocks are unlocked in other cases, one example being the nuclear talks between the US and North Korea where there is presumably no deal that is located in the ZOPA-zone and ripeness is very low. Different regimes absorb costs differently, which highlights the importance of not only looking at if a deal is ZOPA-compatible but also if there is a sense of WO and a MHS, which in turn created ripeness.
Chapter 6

6.1 Alternative explanations

Among aspects that the modified ZOPA-model neglects is for example ideological believes of leaders that can affect ripeness, which means that a moment for agreement may only be ripe if leaders committed to bilateralism hold office. The installment of Obama and Rohani as presidents succeeding the more hardline conservative Bush and Ahmadinejad may have created a ripe moment in spite of oil revenue or hurting costs. The empirical record shows however that the US and Iran had roughly the same preferences before and after the changed leadership, with some differences in foreign policy strategies. Domestic interests are not taken into account in the modified ZOPA-model either, and domestic resistance or promotion of cooperation might be an important constrain that leaders have to deal with when designing deals. Domestic interests as a constraint could be taken into account in future modifications of the model.

Negotiation setup is another aspect not taken into account, but the empirical material shows that when the US is not involved, negotiation setup appears to have little effect on ripeness or incentives to strike a deal, which can be attributed to the enormous influence that the US exercises in international politics. Effects of negotiation setups not involving the US are therefore probably minor, but could also be included in future modifications of the model. The role of institutions and information under uncertain circumstances is something which the ripeness-conditioned ZOPA-model does not take into account. Institutions such as the non-proliferation regime (NPT) are designed to construct extraordinary security strategies to combat security challenges incurred with proliferation of nuclear weapon. The role of security institutions like the NPT is to create common interests, much like the role of the P5+1 group. Usually negotiators do not have perfect information about each other’s red lines given their no-deal options. When states cooperate with institutions it worries them to get exploited and increasing the exchange of information about each other’s intentions can reduce that anxiety. Uncertainty is a substantial issue in security relations, though a strategy designated by a state must even consider the adversary state desire.
To provide intelligence they finance the establishment of institutions that enable states to get more information about each other’s preferences and interests, which in turn decreases uncertainty. States with more credibility to show their real intentions have more bargaining power than other states. Thus, information can be used as a powerful security policy device to deter conflict or influence interest of others.125

Furthermore, Sebenius, Singh and Zartman do not pay attention to the relation between bargaining power and armament (nuclear/missile), however Fearon emphasize that armament is not just about deterrence of adversaries, but also about gaining bargaining power on disputed issues.126

6.2 Conclusion
The Research Question was: How can the Iran nuclear deal be explained through the lens of rational choice theory? The study shows that Iran’s incentive to comply increased as sanctions intensified in 2012, causing Iran’s oil net exports to fall, and Iran’s incitement to engage in a nuclear agreement with the west increased further with declining oil revenue in 2012. During the period 2006-2008 generous proposals were offered as well but did not result in a mutual agreement as rising oil prices, which incentivized Iran to choose the option of not engaging in an agreement, counteracted sanctions against Iran. This study concluded that an agreement designed to incentivize all involved actors to comply has proven insufficient in itself as a strategy for reaching an agreement on Iran’s nuclear program. By adding the concept of Ripeness this paper explains that a MHS is not ended until there is a sense of WO as well as a deal design that incentivize all involved parties to accept the deal. Iranian costs for noncompliance increased enough to incentive Iran to accept the 2013 joint plan for action, fully implemented in 2015. As the modification of Sebenius and Singh model takes into account both the effects of agreement design and sanction costs, the model provides a valid estimate of the factors that incentivizes actors to end up in equilibria’s of mutual agreement.

125 Haftendorn, Keohane and Wallender, 1999, p, 3-4. 
126 Fearon, 2015, p, 5.
Hurting costs and deal design with value are elements that mostly changed Iran’s strategic calculus. Costs reduced the attractiveness of Iran’s no-deal option and new deal design showed to improve joint benefit and incentives. Creative strategies such as credible sanctions worsened Iran’s no-deal option and avoided catastrophes like military conflict or a nuclear-armed Iran.

A weakness of the ripeness concept is that ripeness is difficult to measure since ripe moment is usually detected when a deal has been agreed upon, meaning that up until a deal is sealed, ripeness can only be measured within a wide range of probability. The same is true for ZOPA because it can only estimate if a proposal is closer or further way from ZOPA. For example it is hard to know if 5% enrichment or 4% enrichment would produce a deal or a no deal, but the size of allowance for enrichment will lead negotiations further away from or closer to the ZOPA-zone.

Further research is needed in order to test the generalizability of the ZOPA-model, which is highly context dependent, and relies on rough asymmetry of bargaining power. The understanding of this study is that the combination of the two independent variables would increase the generalizability and further research can verify this conclusion. Another issue that could be discussed further is the sustainability of this deal, which itself is a new phenomenon and the results yet to be seen. Post deal problems of noncompliance highlights the need for further studies on how sustainable deals can be reached, but the ripeness-conditioned ZOPA-model provides a valuable tentative estimate of when deals are likely to be agreed upon, hence providing politicians with a model for how deals should be designed in order to incentive all involved parties to agree.
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Appendix

A shortlist of Iranian proposal of 2003

- Relief of all U.S. sanctions on Iran
- Cooperation to stabilize Iraq
- Full transparency over Iran’s nuclear program, including the Additional Protocol
- Cooperation against terrorist organizations, particularly the Mujahedin-e Khalq and al-Qaeda
- Iran’s acceptance of the Arab League’s 2002 “land for peace” declaration on Israel/Palestine
- Iran’s full access to peaceful nuclear technology, as well as chemical and biotechnology

A shortlist of China, Russia, US and EU3 proposal of 2006

- Iran’s suspension of enrichment-related and reprocessing activities
- The establishment of a mechanism to review this moratorium
- Iran’s resumption of the Additional Protocol
- The provision of state-of-the-art light water reactors to Iran through joint projects, along with nuclear fuel guarantees and a 5-year buffer stock of fuel
- Suspension of the discussion of Iran’s nuclear program in the UN Security Council
- Cooperation on civil aviation, telecommunications, high technology, and agriculture, and other areas, between the U.S., EU, and Iran.

A shortlist of the fuel swap proposal of 2009 (Tehran Research Reactor)

- Iran exports 1,200 kilograms of LEU in a single batch before the end of the 2009.
- Russia further enriches Iran’s LEU to about 20%, a process producing about 120 kilograms of 20%-enriched uranium for the TRR fuel rods.
- France manufactures the TRR fuel rods for delivery about one year after the conclusion of the agreement, prior to the depletion of the current TRR fuel supply.
- The United States works with the IAEA to improve safety and control implementation at the TRR.
Revised proposal

- A political statement of support by the six countries to guarantee that the TRR fuel would be delivered to Iran
- Financing for the movement of LEU and fuel
- An option for the IAEA to hold Iran’s LEU in escrow in a third country until the TRR fuel is delivered

A short list of the Joint Plan of Action (2013)

Elements of the First Phase

Iranian actions:

- Convert half of its stockpile of uranium enriched to 20 percent to oxide form and down blend the remainder to an enrichment level of no more than five percent;
- Suspend production of uranium enriched to above five percent;
- No further advances in nuclear activities at the Natanz Fuel Enrichment Plant, the enrichment plant at Fordow and the Arak heavy water reactor.
- Convert uranium enriched up to five percent produced during the six months to oxide form when the construction of the conversion facility is completed; no new enrichment facilities; research and development practices, including on enrichment, will continue under IAEA safeguards.
- No reprocessing of spent plutonium fuel or construction of any facility capable of reprocessing; and enhanced monitoring including, providing information to the IAEA on plans for nuclear sites and the Arak reactor, negotiating a safeguards approach for the Arak reactor, allow daily IAEA access to Natanz and Fordow, and allow managed access to centrifuge workshops and uranium mines and mills.


**P5+1 Actions:**

- No new nuclear-related sanctions from the UN Security Council, the EU, and the U.S.;
- Pause efforts to further reduce Iran’s oil sales and partial repatriation of frozen Iranian assets from oil sales;
- Suspension of U.S. and EU sanctions on petrochemical exports and gold and precious metals;
- Suspension of U.S. sanctions on Iran’s auto industry;
- Supply and installation of spare parts for Iranian civil airplanes, including repairs and safety inspections;
- Establish a financial channel for humanitarian goods using Iran’s oil revenues that are frozen abroad, which can also be used for tuition payments for Iranian student abroad and payment of Iran’s UN dues; and
- Increase of the EU thresholds for non-sanctioned trade with Iran.

**Elements of a Comprehensive Solution**

- An agreed upon duration;
- Reflection of the rights and obligations of all NPT parties and IAEA Safeguards Agreements;
- Lift all multilateral and unilateral sanctions on nuclear-related measures;
- Define Iran’s enrichment program with agreed upon limits;
- Resolve concerns about the Arak reactor;
- Implement agreed up on transparency measures, including Iran’s ratification and implementation of the Additional Protocol of its safeguards agreement with the IAEA;
- Cooperate on civil nuclear projects, including a light water reactor for power, research reactors, and nuclear fuel.