

Does Domestic Polarization Affect the Credibility of International Commitment? *

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Abstract

We study the effect of the partisan polarization of foreign policy on a state's ability to make credible commitments in international bargaining. In our model, both states know that after an agreement is reached, a new government to enforce the agreement is elected within a promise-making state. The incentive for the newly elected government to comply with the agreement depends on the domestic (partisan) and international (reputational) costs of noncompliance, both of which vary across parties. The equilibrium analysis shows that an agreement is less likely as a partisan divide increases. When a partisan divide is substantial, our model shows that the possibility of reaching an agreement is larger under a hawkish negotiator than a dovish negotiator. Episodes from the negotiations between the U.S. and North Korea over North Korea's nuclear weapons program provide support for our theory.

Introduction

Observers of American politics have noticed a sharp rise in the partisanship since 1980s, the origin of which is often dated back to the 1960s (Fiorina, Abrams and Pope, 2004; Layman, Carsey and Horowitz, 2006; McCarty, Poole and Rosenthal, 2006; Theriault, 2008; Abramowitz, 2010; Jacobson, 2010). Recently, some scholars consider this rising tide of partisan polarization to have dismantled the postwar bipartisan consensus in foreign policy, generating a “structural change”

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or a “major change” in the nature of American foreign policy making (Shapiro and Bloch-Elkon, 2005; Kupchan and Trubowitz, 2007).¹

One example of the polarization of foreign policy can be found in U.S. diplomacy over North Korea’s nuclear programs. The general consensus among U.S. negotiators during the George H.W. Bush administration and the Clinton administration was that the isolation of North Korea would not help solve the nuclear problem. Despite mounting tensions between the two sides, the U.S. continued talks with North Korea, and as a consequence, both sides reached two important agreements on the denuclearization in 1994 and 2000. However, the general consensus binding two U.S. administrations with different party labels quickly disappeared after George W. Bush’s presidential victory and the September 11, 2001 terrorist attack. After publicly denouncing North Korea as a terrorist ally and as part of “an axis of evil, arming to threaten the peace of the world,” the George W. Bush administration changed North Korean policy in the direction of containment. The hostile relationship between two sides scuttled the enforcement of several agreements. However, despite hostile relations with North Korea, the George W. Bush administration managed to reach three agreements between 2005 and 2008 via six-party talks though neither of them was fully enforced. How were these agreements possible when neither side considered the other as a reliable partner? Why has there been no progress in the six-party talks during the Obama administration that has shown less hostility to North Korea than the George W. Bush administration?

The goal of this paper is to present a theoretical model that helps us understand how domestic

¹Chaudoin, Milner and Tingley (2010) criticized Kupchan and Trubowitz (2007) for conflating procedural votes with substantive votes in the analysis. When they differentiated the types of votes, a decline in bipartisanship was found only in procedural votes. In response, Kupchan and Trubowitz (2010) defended the original claim by criticizing Chaudoin, Milner and Tingley (2010)’s inconsistent use of procedural votes and amendment votes and showed additional qualitative evidence from the Obama administration’s foreign policy. While the debate focuses largely, but not entirely, on foreign policy making within Congress, this paper focuses on the rising partisan differences in U.S. presidents’ approaches to foreign policy issues, which may or may not be affected by the vanishing (or consistent) moderation in foreign policy making in Congress.

ideological polarization affects states' ability to make credible commitments in international negotiations. A central feature of the model is a commitment problem (Powell, 2006): the preference of a negotiating government might be different from that of an enforcing government. In our model, once an agreement is reached, there will be an election to choose a new government, and the newly elected government will decide according to its own preferences whether to abide by the agreement made by the old government.

We consider two factors to affect the severity of the commitment problem in this paper. One is (party-specific) reputational sanctions imposed by international audiences. Earlier studies of reputational sanction assume that the state is the unitary holder of reputations, which helps us understand how reputational sanctions alone can encourage compliance in the absence of central authority (Keohane, 1984; Simmons, 2000; Abbott and Snidal, 2000; Tomz, 2007). However, this conventional assumption ignores the fact that individual governments “will not internalize fully the reputational costs and benefits to the state in its compliance calculus” (Brewster, 2009, 325). In this regard, models of leader-specific punishment broaden our understanding on the effects of reputational sanctions on domestic incentives for international cooperation (Guisinger and Smith, 2002; Satori, 2005; McGillivray and Smith, 2000, 2006; Wolford, 2007). However, focusing on individual leaders shortens a temporal window too much to understand long-term consequences of reputational sanctions. Leaders do not stay in power for a long time, especially in democracies, and so does their reputation. We argue that assuming political parties as the principal holders of international reputations can bridge the gap between two approaches without losing their theoretical insights. In our model, political parties incur costs of violating the nation's previous commitments, but the costs are conditional upon *which party* made the commitment. We assume that a governing party's violation of its own commitments hurts its ability to make a credible commitment in the

future more than its violation of the other party's commitments.

The second factor that affects the severity of the commitment problem is the degree of party polarization in domestic politics. Political parties have different preferences for the outcome of international cooperation. Following the previous literature on interactions between international and domestic politics (Putnam, 1988; Cukierman and Tommasi, 1998; Kydd, 2000; Schultz, 2005), we use a stylized case of two political parties with different foreign policy views: a dovish party and a hawkish party. A dovish party is more willing to comply with an international agreement than a hawkish party is for internal partisan reasons. These partisan differences jointly with party-specific reputational sanctions affect the prospect for international cooperation.

The equilibrium analysis shows that the partisan divide makes international agreement less likely, but even when party polarization is so substantial that a hawkish party cannot be considered a reliable negotiating partner, it could still make a "deep" agreement with another state. An unreliable hawkish negotiator could buy a policy of another by promising generous side-payments because if a dovish party wins an election, then it will enforce the promise of generous side-payments. Existing studies on international cooperation share the idea that states never seriously bargain when at least one of the negotiators is expected to violate an agreement in the future. Our model shows that it is still possible to reach a "deep" agreement under such a grim condition.

We provide anecdotal evidence from the history of the U.S. negotiations over North Korea's nuclear development program. Specifically, we ask whether instances of the formation and the enforcement of agreements are consistent with our theoretical predictions from the model. We find that agreements between the George W. Bush administration and North Korea during 2005 - 2008 and the lack of agreement between the Obama administration and North Korea during 2008 - 2011 are largely consistent with our prediction that it is a hawkish negotiator that benefits from a highly

partisan domestic environment. We conclude by summarizing several implications of our model to the literature.

The Model

In this section, we formalize the relationship between partisan politics and the prospect for international cooperation based on the assumption of complete information in order to focus on the time inconsistency problem.² Our theoretical focus is how the possibility of a partisan switch in government affects (1) the likelihood of compliance, (2) the likelihood of bargaining success, and (3) the design of the form of agreement. Our key explanatory variables are the varying level of party polarization and party-specific reputational sanctions, which will be explained in detail below.

The game is played between three actors - two political parties in state 1 (S_1) and one political party in state 2 (S_2). To focus on the interaction between domestic politics in S_1 and international negotiations, we simplify S_2 as a unitary actor. The two states are in conflict over the policy of S_2 , the value of which is normalized to unity. At the beginning of the game, the governing party of S_1 decides how large a side-payment it promises to make in order to buy the disputed policy from S_2 . We denote $x \geq 0$ as the size of side-payments promised by the governing party of S_1 at the bargaining stage. Faced with the proposal, S_2 decides whether or not to change the policy. If it chooses not to change the policy, then the game immediately ends with no change in the status quo, where each actor receives payoffs 0, 0, and 1, respectively. On the other hand, if S_2 changes its policy, then S_1 holds an election and the winning party decides whether or not to make the

²This does not mean that we understate the role of informational problems in asymmetric bargaining. Instead, we believe that focusing on the commitment problem can provide important insights about why bargaining fails even when each party shares information about each other's intentions and interests (Powell, 2004).

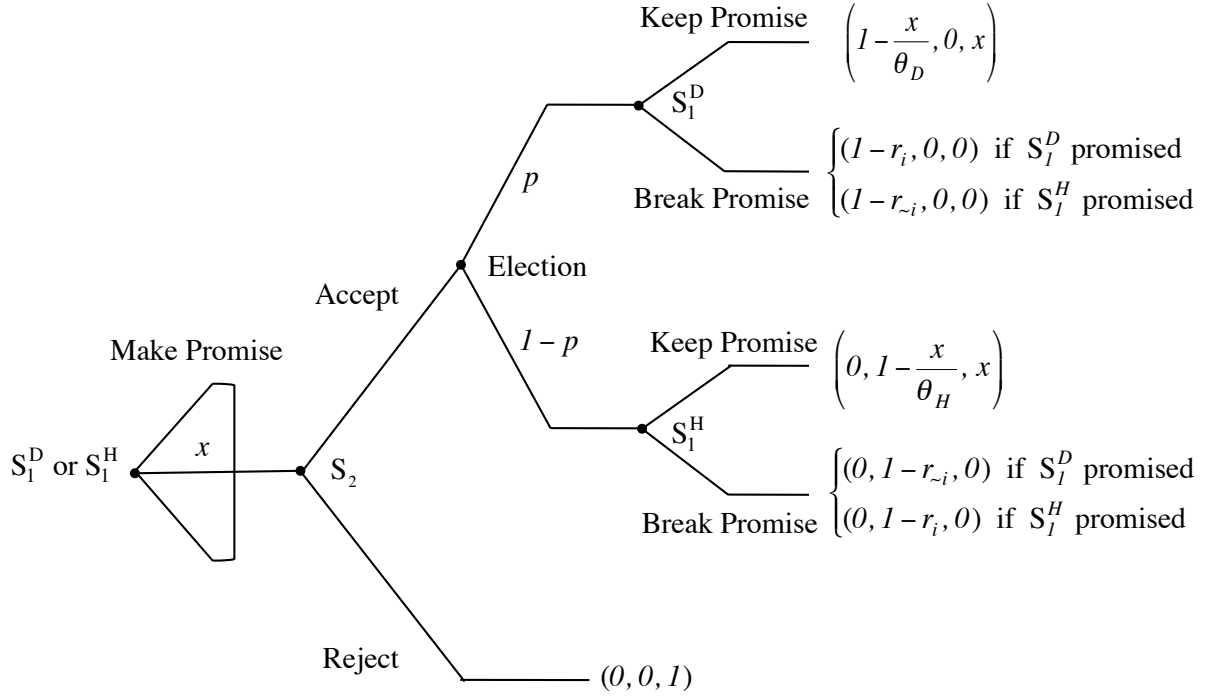


Figure 1: S_1^D and S_1^H represent, respectively, the Dove party government and the Hawk party government of S_1 . The order of payoffs is (S_1^D, S_1^H, S_2) .

side-payment previously promised at the bargaining stage. If the newly elected government of S_1 chooses to keep the promise, then x units of side-payments will be transferred to S_2 . But, if the newly elected government of S_1 chooses to break the promise, then no side-payments will be transferred to S_2 . Figure 1 displays the sequence of moves.

We assume that it is difficult for S_2 to revoke the policy change even when S_1 decides to break the promise, for the reversal may take a long time and require extensive resources.³ In this

³We can allow the possibility that S_2 may delay the concession of the object until S_1 enforces the agreement in its entirety. Then, the game will not end with a newly elected S_1 government's enforcement decision, and we could model how S_2 responds to S_1 's enforcement decision. The choice of the transfer schedule is an interesting issue, which is beyond the scope of our paper. For example, in reality, S_1 and S_2 may agree to a piecemeal payment scheme that starts

sense, a change in the policy could be a risky gamble for S_2 . In many international negotiations, irreversibility is one of the key terms of negotiation demanded by a promise-making state. For example, in U.S. negotiations with North Korea, James Kelly, Assistant Secretary for East Asian and Pacific Affairs during the George W. Bush administration, summarized the goal of U.S. approaches to North Korea's nuclear programs as "complete, verifiable, irreversible dismantlement of North Korean nuclear programs."⁴

Two political parties - the Dove party and the Hawk party - in S_1 have different preferences for enforcement outcomes: the Dove party prefers compliance more strongly than the Hawk party. We parameterize the partisan difference using a parameter $\theta > 0$ that measures the willingness to comply with international agreements (the larger θ , the more willing to abide by international agreements). Since the Dove party is more willing to comply than the Hawk party,

$$\theta_H < \theta_D$$

where the subscripts D and H , respectively, denote the Dove party and the Hawk party.

The winning party in the election receives a benefit of policy change in S_2 (a payoff of 1) as a political rent, whereas the losing party gains nothing regardless of international outcomes. We denote $0 < p < 1$ as the probability that the Dove party wins an election (*i.e.* the Hawk party wins with $1 - p$). We assume that p is independent of international outcomes. Although the exogeneity of domestic elections is a restrictive assumption, it is useful to simplify the complex

right after the negotiation. Although this payment scheme can increase the range of cooperation by resolving the time inconsistency problem a little bit, the results do not qualitatively change if the major portion of the benefits are yet to be delivered at the time of elections.

⁴James Kelly, "Opening Remarks Before the Senate Foreign Relations Committee," U.S. Department of State, March 2, 2004, <http://www.state.gov/p/eap/rls/rm/2004/30093.htm>.

interplay between domestic and international politics as proven in previous studies (Lohmann, 1993; Smith and Hayes, 1997).⁵ Similar to Smith and Hayes (1997), we assume that elections affect international outcomes, not the other way around.⁶

If the winning party in the election decides to keep the promise of paying x units of side-payments, then it loses x/θ units of utility, where $\theta \in \{\theta_D, \theta_H\}$. Since $\theta_H < \theta_D$,

$$\frac{x}{\theta_D} < \frac{x}{\theta_H}. \quad (1)$$

That is, the Hawk party loses more utility from keeping a promise than the Dove party does *ceteris paribus*.

If the winning party decides to break a promise, then it incurs *party-specific reputational loss*. The concept is new to the literature and hence needs elaboration. The effect of reputational sanctions hinges on two conditions: the principle of consistency and the verifiability of noncompliers. The first condition implies that being consistent with previous commitments should improve one's utility by making its future commitments more credible. And the second condition says that reputational sanctions should be "imposed specifically on the transgressor" (Keohane, 1984, 105). When we move to the unit of analysis into the partisan actor level, it is natural to distinguish the non-

⁵Lohmann (1993) presents a model assuming that voters choose parties in elections *independently* of the outcomes of international macroeconomic policy coordination. In a two-level game model consisting of bargaining, election, and renegotiation phases, Smith and Hayes (1997) assume that domestic elections affect the renegotiation process, but election results are determined *solely* by domestic issues.

⁶In this paper, we do not consider that foreign policy issues are the main driver of party polarization. Instead, the polarization of foreign policy is assumed to be a consequence of partisan divergence on domestic issues. The assumption of the secondary nature of foreign policy issues in partisan polarization is based on our reading of the party polarization literature in American politics. The American politics literature generally considers that party polarization in recent U.S. politics reflects broader trends of party realignment in the South and other social changes involving the ideological sorting of the electorate based on sensitive socio-economic issues such as abortion, gay rights, immigration, trade, and government spending (Wattenberg, 1991; Nadeau and Stanley, 1993; Miller and Schofield, 2003; McCarty, Poole and Rosenthal, 2006; Miller and Schofield, 2008; Jacobson, 2010). However, we consider this simplification as a baseline model for a more general theory that fully endogenizes domestic political competition with international bargaining, which we are currently working on in a separate paper.

compliance cases into two types: *informative non-compliance* and *uninformative non-compliance*. Informative non-compliance occurs when a party breaks a promise made by its own party government. Uninformative non-compliance occurs when a party breaks a promise made by opposition party governments. Parties carry their brand names not just in domestic politics but also in international affairs because international audiences update a party's credibility by watching its behavior while in power. Then, it is easy to see that informative non-compliance is more costly than uninformative non-compliance as international audiences learn more from informative non-compliance than uninformative non-compliance about the credibility of partisan actors.⁷

We denote $r_{\sim i} > 0$ as the loss of utility from informative non-compliance and $r_i > 0$ as the loss of utility from uninformative non-compliance. The existence of party-specific reputational sanctions means

$$r_{\sim i} \leq r_i. \quad (2)$$

That is, for example, if the Dove party breaks a promise previously made by the Hawk party, then the Dove party loses $r_{\sim i}$ units of utility. If the Dove party breaks a promise previously made by the Dove party, then the Dove party loses r_i units of utility, which is bigger than or equal to $r_{\sim i}$. To exclude trivial cases, we assume the loss from informative non-compliance is smaller than the value of the disputed object: $r_i < 1$.

In the following, we denote the degree of party-specific reputational sanctions as a ratio of r_i and $r_{\sim i}$: $\frac{r_i}{r_{\sim i}}$. The larger the ratio, the greater the difference in the reputational burden of compliance between old and new governments. Similarly, we denote the degree of party polarization as a ratio of θ_D and θ_H : $\frac{\theta_D}{\theta_H}$. The larger the ratio, the greater the difference in partisan views on

⁷We believe that non-compliance hurts not just the in-party but also the nation as a whole. However, we only parameterize partisan reputational losses as indiscriminate reputational sanctions will cancel out in the partisan calculation.

foreign policy. The conventional unitary state actor model of reputational sanctions can be considered as a special case of our model when $r_{\sim i} = r_i$ and $\theta_D = \theta_H$. That is, the unitary state actor model makes a strong assumption that there is no partisan divide over foreign policy views and international reputations are shared equally by all political actors in the state.

Equilibrium Behavior at the Enforcement Stage

After the election, the winning party makes a decision of whether to keep the promise previously made at the bargaining stage. The enforcement decision hinges on two factors: which party *is* in charge of enforcement decision and which party *was* in charge of the international negotiation. Since two political parties compete for office in S_1 , there are four possible cases. Backward induction derives S_1 's equilibrium behaviors for each case as follows (see Appendix for proof):

1. Dovish Negotiator – Dovish Enforcer

S_1 keeps a promise if and only if $x \leq \theta_D r_i$

2. Dovish Negotiator – Hawkish Enforcer

S_1 keeps a promise if and only if $x \leq \theta_H r_{\sim i}$

3. Hawkish Negotiator – Dovish Enforcer

S_1 keeps a promise if and only if $x \leq \theta_D r_{\sim i}$

4. Hawkish Negotiator – Hawkish Enforcer

S_1 keeps a promise if and only if $x \leq \theta_H r_i$

Table 1 summarizes S_1 's equilibrium behavior at the enforcement stage. First, suppose that the Dove party was in charge of international negotiation (*Dovish Negotiator*). Since $\theta_H < \theta_D$ and

Table 1: S_1 's Equilibrium Behavior at the Enforcement Stage

World	Negotiator	I	II	III
1	Dove	$x \leq \theta_H r_{\sim i}$ Both Keep	$< x \leq \theta_D r_i$ Dove Keeps Hawk Breaks	$\theta_D r_i < x$ Both Break
2	Hawk	$x \leq \theta_H r_i$ Both Keep	$< x \leq \theta_D r_{\sim i}$ Dove Keeps Hawk Breaks	$\theta_D r_{\sim i} < x$ Both Break
3	Hawk	$x \leq \theta_D r_{\sim i}$ Both Keep	$< x \leq \theta_H r_i$ Hawk Keeps Dove Breaks	$\theta_H r_i < x$ Both Break

Note: Columns I to III indicate three compliance regimes determined by the relative sizes of side-payments (x), party polarization (θ_D and θ_H), and party-specific reputations (r_i and $r_{\sim i}$). Row 1 represents a situation where the Dove party was in charge of international negotiation, while Rows 2 and 3 represent situations where the Hawk party was in charge of it. Specifically, Row 2 represents a situation where two parties are so polarized that the difference between dovish and hawkish governments outweighs the difference between international burdens of old and new governments $\frac{r_i}{r_{\sim i}} < \frac{\theta_D}{\theta_H}$ (Row 3 represents the reverse situation).

$r_{\sim i} < r_i$, it follows that $\theta_H r_{\sim i} < \theta_D r_i$. In this world of dovish negotiator, the Dove party is more likely to comply with the agreement than the Hawk party at the enforcement stage due to the dovish party's stronger preference for compliance and its larger reputational loss for non-compliance.⁸

Next, suppose that the Hawk party is in charge of international negotiation (*Hawkish Negotiator*), and that the two political parties are so polarized that the difference between dovish and hawkish governments outweighs the difference between international burdens of old and new governments $\frac{r_i}{r_{\sim i}} < \frac{\theta_D}{\theta_H}$ (World 2 in Table 1). Notice that this could happen due to changes on the left hand side (increasing party polarization), changes on the right hand side (decreasing discriminate party-specific reputational sanctions, i.e., $r_i \rightarrow r_{\sim i}$), or both. As long as partisan differences in foreign policy views are substantial compared to partisan differences in reputational burdens of compliance, the Dove party is more likely to comply with international agreement *even if* the

⁸Three cases arise in the world of dovish negotiator. First, if $x \leq \theta_H r_{\sim i}$, then both parties will keep the promise if they are in office at the enforcement stage. Second, if $\theta_H r_{\sim i} < x \leq \theta_D r_i$, then the Dove party will keep the promise while the Hawk party will break it. Last, if $\theta_D r_i < x$, then both parties will break the promise.

agreement was previously made by the Hawk party.⁹

An interesting case arises when the Hawk party is in charge of international negotiation (*Hawkish Negotiator*) and the two political parties are not so polarized that the difference between the international burdens of old and new governments outweighs the difference between dovish and hawkish governments $\frac{r_i}{r_{\sim i}} > \frac{\theta_D}{\theta_H}$ (World 3 in Table 1). This could happen due to changes on the left hand side (decreasing party polarization, i.e., $\theta_D \rightarrow \theta_H$), changes on the right hand side (increasing discriminatory party-specific reputational sanctions), or both. Notice that in this scenario it is the Dove party that is more likely to break the international agreement and it is the Hawk party that is more likely to comply with the agreement since the Dove party has a relatively similar preference to the Hawk party and the Hawk party faces a larger reputational burden of compliance as a promise-maker.¹⁰

Equilibrium Behavior at the Bargaining Stage

Negotiations between two states succeed when S_2 accepts an offer proposed by S_1 . S_2 decides whether to accept an offer based on its rational expectation about possible outcomes at the enforcement stage. It is obvious that S_2 never accepts an offer that is not enforceable by any party in S_1 . In contrast, if the enforcement of the agreement is in the best interest of both parties in S_1 , then S_2 accepts an offer as long as the size of side-payments is large enough to compensate the loss of utility from changing its policy change, i.e., $1 \leq x$.

However, cooperation becomes a risky gamble for S_2 when S_1 's compliance decision is *condi-*

⁹ $\frac{r_i}{r_{\sim i}} < \frac{\theta_D}{\theta_H}$ implies $\theta_H r_i < \theta_D r_{\sim i}$. Thus, if $x \leq \theta_H r_i$, then both parties will keep the promise. If $\theta_H r_i < x \leq \theta_D r_{\sim i}$, then the Dove party will keep the promise while the Hawk party will break it. Last, if $\theta_D r_{\sim i} < x$, then both parties will break the promise.

¹⁰ Since $\frac{r_i}{r_{\sim i}} > \frac{\theta_D}{\theta_H}$ implies $\theta_D r_{\sim i} < \theta_H r_i$. First, if $x \leq \theta_D r_{\sim i}$, then both parties will keep the promise. if $\theta_D r_{\sim i} < x \leq \theta_H r_i$, then the Hawk party will keep the promise while the Dove party will break it. Last, if $\theta_H r_i < x$, then both parties will break the promise.

tional on the outcome of the election. There are three possibilities for such conditional compliance:

1: Dovish Negotiator and $\theta_H \theta_{\sim i} < x \leq \theta_D r_i$

S_1 complies only when the Dove party wins election

2: Hawkish Negotiator and $\theta_H r_i < x \leq \theta_D r_{\sim i}$

S_1 complies only when the Dove party wins election

3: Hawkish Negotiator and $\theta_D r_{\sim i} < x \leq \theta_H r_i$

S_1 complies only when the Hawk party wins election

In the first two possibilities, S_2 's expected payoff of accepting an offer is $p(x) + (1 - p)0$. Since the status quo payoff is 1, S_2 accepts an offer if and only if the size of side-payments (x) is larger than or equal to $\frac{1}{p}$, implying that as the electoral strength of the Dove party (p) increases it becomes cheaper for S_1 to buy off S_2 .

On the other hand, in the third possibility, S_2 's expected payoff of accepting an offer is $p(0) + (1 - p)x$. Hence, the minimum size of side-payments necessary for agreement is $\frac{1}{(1-p)}$, implying that contrary to the previous two cases it becomes more expensive for S_1 to buy off S_2 as the electoral strength of the Dove party increases because it is the Dove party that will break the promise. In other words, the effect of the power distribution at the domestic level (p) on the possibility of international cooperation is conditional upon the partisanship of the negotiator (and the relative sizes of party polarization and party-specific reputation).

Figures 2 to 4 display bargaining and enforcement outcomes on the equilibrium path for every possibility (see Appendix for proof). The grey areas indicate constraints on parameters such as $\theta_H < \theta_D$, $\frac{r_i}{r_{\sim i}} < \frac{\theta_D}{\theta_H}$ (Figure 3), and $\frac{r_i}{r_{\sim i}} > \frac{\theta_D}{\theta_H}$ (Figure 4). In all figures, the upper right corners indicate situations where both parties will keep a promise after winning the election. On the other

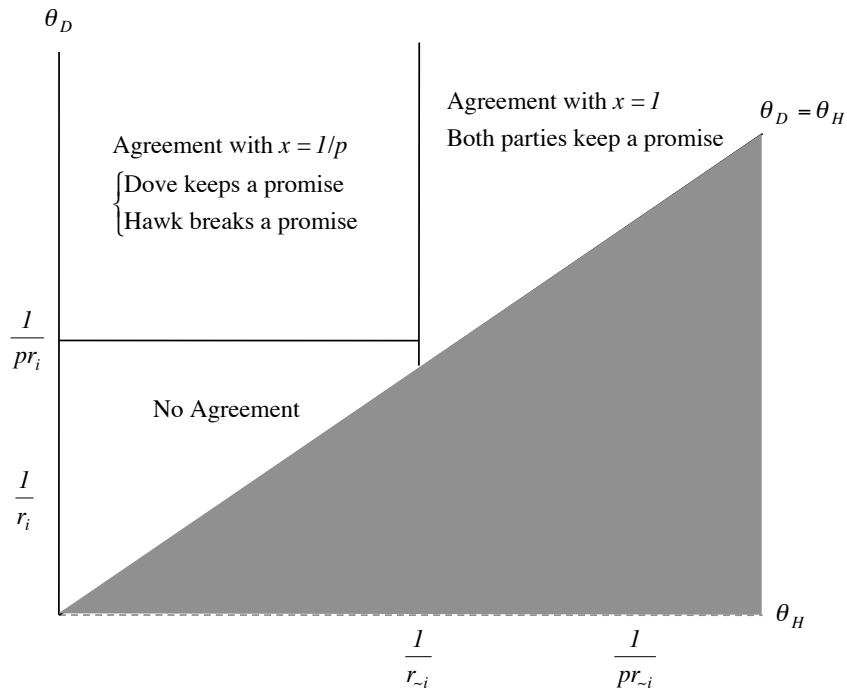


Figure 2: The Dove party is in charge of international negotiation. The shaded area indicates a constraint $\theta_D > \theta_H$. The upper right corner indicates a situation where both the Dove and the Hawk parties comply with the agreement after winning election. The rectangular area in the upper left corner corresponds to a situation where only one of the two parties enforces the agreement. The trapezoid in the lower left corner corresponds to a situation where there is no mutually beneficial agreement for both countries.

hand, the rectangular areas in the upper left corners of Figures 2 and 3 correspond to situations where only one of the two parties keeps a promise. Lastly, the trapezoids in the lower left corners of Figures 2 and 3 correspond to situations where there is no possibility for mutually beneficial agreement between the countries. Unlike Figures 2 and 3, Figure 4 has a triangular area for the conditional compliance where the Dove party breaks a promise while the Hawk party keeps it at the enforcement stage.

Existing studies on international cooperation more or less share the idea that states never seriously bargain when at least one of the negotiators is expected to violate an agreement (Chayes and

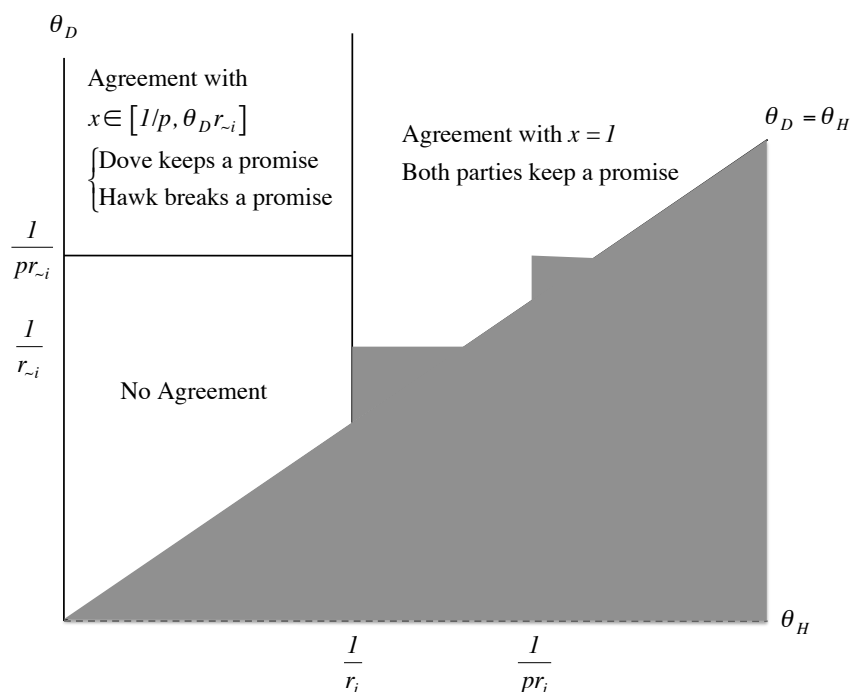


Figure 3: The Hawk party is in charge of international negotiation and $\frac{r_i}{r_i} < \frac{\theta_D}{\theta_H}$. The two shaded “humps” - (1) $\frac{1}{r_i} \leq \theta_H \leq \theta_D$ and $\frac{1}{r_i} \geq \theta_D$ and (2) $\frac{1}{pr_i} \leq \theta_H$ and $\theta_H \leq \theta_D \leq \frac{1}{pr_i}$ - are the areas under which the condition $\frac{r_i}{r_i} < \frac{\theta_D}{\theta_H}$ is violated. The upper right corner indicates a situation where both the Dove and the Hawk parties in S_1 comply with the agreement after winning the election. The rectangular area in the upper left corner corresponds to a situation where only one of the two parties enforces the agreement. The trapezoid in the lower left corner corresponds to a situation where there is no mutually beneficial agreement between the countries.

Chayes, 1993; Downs, Rocke and Barsoom, 1996; Fearon, 1998). Contrary to the conventional wisdom, our model shows that it is still possible to reach a “deep” agreement under such grim conditions. To see this, look at Figure 3 where the Hawk party is in charge of international negotiation and the two parties are substantially polarized (relative to the difference between party-specific reputations). In this state of the world, there is an equilibrium such that the Hawk party promises to pay $x \in [\frac{1}{p}, \theta_D r_i]$ units of side-payments and S_2 accepts any offer that belongs to that range knowing that the Hawk party will never keep such a generous promise in the future.

party in the future. In short, both S_2 and the Hawk party in S_1 can reach a mutually beneficial agreement, at the expense of the Dove party in S_1 , when there is a substantial partisan divide in domestic politics.

Formal Agreements as a Dovish Strategy

Our theory so far provides a grim picture on the possibility of an agreement by a dovish negotiator facing a deep domestic divide in foreign policy. The central reason for the dovish disadvantage lies in the fact that a dovish negotiator has to compensate for the risk of non-compliance, which increases with the size of a hawkish partisan gain from non-compliance, by paying more than what a hawkish negotiator would offer.

In this section, we discuss that previous studies on the rational design of the formality of agreement (Downs, Rocke and Barsoom, 1996; Koremenos, Lipson and Snidal, 2001) and the institutional participation of opposition parties in negotiations (Martin, 2000) can be considered as a possible way for a dovish negotiator to lessen the risk of non-compliance. First, as Lipson (1991) notes, a formal agreement such as a treaty binds the behavior of succeeding governments more effectively than an informal agreement such as a verbal commitment. Thus, a formal agreement weakens the asymmetry in reputational burdens of enforcement between old and new governments. Also, the formalization of agreements can be understood from an institutional perspective. In democracies, fully formalizing an agreement often requires domestic ratification through legislative bodies. Although there is variation in opposition parties' influence in legislative processes, legislative participation increases the credibility of commitment by ensuring the enforcement of an agreement in case of changes in governing parties (Martin, 2000). In other words, institutional-

ized participation of opposition parties in international negotiations weakens the importance of a negotiator's party label for the prediction of compliance.

Although endogenizing the formality of an agreement requires different model specifications, we sketch its implications within the framework of our model here. Suppose that a formal agreement binds old and new governments *equally* ($r_{\sim i} \rightarrow r_i$), but an informal agreement binds *only* an old government ($r_{\sim i} \rightarrow 0$). Notice that $r_{\sim i} \rightarrow r_i$ implies $\frac{r_i}{r_{\sim i}} \rightarrow 1$, while $r_{\sim i} \rightarrow 0$ implies $\frac{r_i}{r_{\sim i}} \rightarrow \infty$. Hence,

$$\begin{aligned} \frac{r_i}{r_{\sim i}} &< \frac{\theta_D}{\theta_H} && \text{when agreement is formal} \\ \frac{r_i}{r_{\sim i}} &> \frac{\theta_D}{\theta_H} && \text{when agreement is informal.} \end{aligned} \tag{3}$$

When the Dove party is in charge of international negotiation as shown in Figure 2, the dovish negotiator has an incentive to make a formal agreement to broaden the region of “unconditional compliance” (the north-east region in Figure 2). A formal agreement binds the old Dove government and a new Hawk government equally by making $r_{\sim} \rightarrow r_i$. Notice that, on the equilibrium path, S_2 's expected payoff is always 1 regardless of the outcome of the game. Thus, when the dovish party is in charge of international negotiation, both negotiating governments (S_1 and S_2) are (weakly) better off by designing a formal rather than an informal agreement.

When the Hawk party is in charge of international negotiation, there are two possible equilibrium outcomes depending on the size of party polarization $\frac{\theta_D}{\theta_H}$ relative to the difference between the international burdens of old and new governments $\frac{r_i}{r_{\sim i}}$. As explained above, a formal agreement makes $r_{\sim i} \rightarrow r_i$, while an informal agreement $r_{\sim i} \rightarrow 0$. The former implies $\frac{r_i}{r_{\sim i}} < \frac{\theta_D}{\theta_H}$, which corresponds to Figure 3, while the latter implies $\frac{r_i}{r_{\sim i}} > \frac{\theta_D}{\theta_H}$, which corresponds to Figure 4.

A crucial difference between the two regimes is *the impact of dovish electoral strength (p) on the likelihood of agreement*. First, consider the case of formal agreement, which corresponds to $r_{\sim i} \rightarrow r_i$ in Figure 3. Notice that since $r_{\sim i} \rightarrow r_i$ implies $\frac{1}{pr_{\sim i}} \rightarrow \frac{1}{pr_i}$ and $\frac{1}{r_{\sim i}} \rightarrow \frac{1}{r_i}$, the grey-colored “humps” in the upper-right triangle will disappear, in which case the likelihood of agreement increases as dovish electoral strength p increases because it is the Hawk party that will break a promise. Next, consider the case of informal agreement, which corresponds to $r_{\sim i} \rightarrow 0$ in Figure 4. Notice that $r_{\sim i} \rightarrow 0$ implies $\frac{1}{r_{\sim i}} \rightarrow \infty$, in which case the likelihood of agreement decreases as dovish electoral strength p increases because it is the Dove party that will break a promise.

To summarize, when a hawkish negotiator faces a strong electoral challenge from a dovish party, it is more likely to make a formal rather than an informal agreement. In contrast, when a hawkish negotiator faces a weak electoral challenge from a dovish party, it is more likely to make an informal rather than a formal agreement.

U.S.-North Korea Negotiations over Nuclear Programs

On July 9, 1982, President Reagan received a brief memo from the CIA about the discovery of a nuclear research reactor in Youngbyon, North Korea.¹¹ Bilateral talks with North Korea over nuclear programs were started by the George H.W. Bush administration in 1992. In this section, we examine the history of U.S.-North Korea negotiations over nuclear programs from the George H.W. Bush administration to the Obama administration focusing on the partisan type of U.S. gov-

¹¹A year later, U.S. intelligence concluded, “North Korea has a small nuclear research program that includes the use of a 4-MW modified IRT-type research reactor supplied by the Soviet Union . . . we [the CIA] expect North Korea to continue to pursue its aim of acquiring a nuclear power reactor during the 1980s” (Directorate of Intelligence, 1983, 5).

ernments, Hawk or Dove, and the level of partisan divide over North Korean policy, high or low. The outcome of interest is the formation of agreements which occurred during the Clinton administration and the George W. Bush administration as summarized in Table 2. As mentioned in the beginning of the paper, the formation of agreements between 2005 and 2008 is particularly puzzling given hostile relationship between the George W. Bush administration and North Korea. Also, why has there been no progress in the six-party talks under the Obama administration that has shown less hostility to North Korea than the George W. Bush administration?

Table 2: History of U.S. Negotiations with North Korea

Administration	Reagan	George H.W. Bush	Clinton	George W. Bush	Obama
Party	Republican	Republican	Democrat	Republican	Democrat
Type	Hawk	Hawk	Dove	Hawk	Dove
Polarization*	Low	Low	Low	High	High
Agreements			1994, 2000	2005, 2007	

Note: *Polarization indicates party polarization in the foreign policy regarding North Korea, which is $(\theta_D - \theta_H)$ in the model, not the general level of party polarization in the U.S. politics.

Negotiations During Periods of a Low Partisan Divide

The Reagan administration, staffed predominantly by Republicans, did not directly engage with North Korea over the issue, but sought international cooperation to prevent North Korea from obtaining nuclear materials. In 1988, Reagan’s vice president, George H.W. Bush, was elected president over Democrat Michael Dukakis. Bush adopted a policy of “comprehensive engagement” that considered the possibility of direct talks with the intent of normalizing relations with North Korea. According to National Security Review 28, which summarized the policy of comprehensive engagement, the U.S. government believed that isolating North Korea would not be in the best

interest of the U.S.¹²

In the first official meeting between the two countries after the detection of nuclear facilities at Youngbyun, the U.S. made what it thought was an attractive offer. If North Korea agreed to sign and comply with the IAEA safeguards agreement, it could expect “a future of greater communication and commerce with the United States and the rest of the international community” (Wit, Poneman and Gallucci, 2004, 12). However, North Korea declined because “the U.S. promise of greater communication and commerce was so vague and intangible” (Wit, Poneman and Gallucci, 2004, 12). As the 1992 presidential election approached, the Bush administration’s incentive to engage in the North Korean nuclear issue weakened because of its domestic sensitivity and because of the importance of other issues, primarily the slow economy. Also, North Korea was not eager to cut a deal with an administration that might be out of office in a few months. Indeed, that is just what happened when Bush lost to Democrat Bill Clinton in November.

The Clinton administration’s policy toward North Korea was largely a replication of the Bush administration’s “comprehensive engagement” strategy (Wit, Poneman and Gallucci, 2004, 40). In other words, despite the partisan change in government in 1992, there was no significant partisan divide over the policy toward North Korea in the beginning of the Clinton administration. Our model predicts that the probability of an agreement would be similar between the Clinton administration and the George H.W. Bush administration because of the low partisan divide over policy toward North Korea during these time periods.

However, the Clinton administration had to respond to a new situation caused by the conflict between the IAEA and North Korea over the inspection of areas suspected of housing nuclear facilities. With no hope of direct talks with the U.S. and the impending IAEA deadline, North

¹²Quoted from Wit, Poneman and Gallucci (2004). p.7.

Korea announced its withdrawal from the NPT on June 13, 1994. The Clinton administration did not want to appear to have rewarded North Korea for its withdrawal from the NPT and chose a strategy of “gradual escalation” in response, which implied building an international coalition while increasing pressure on North Korea. But the Clinton administration never shut the channel for a diplomatic solution, which provided a way out of the nuclear crisis for both states. On the brink of war, former President Carter visited North Korea in June of 1994, which gave North Korea a chance to retreat while saving face. Later that fall, the Clinton administration and North Korea signed the Agreed Framework. North Korea agreed to freeze and eventually dismantle its graphite-moderated reactors, accept IAEA monitoring, cooperate to store the spent fuel safely, and remain a party to the NPT. In return, the U.S. agreed to provide formal assurances against the threat or use of nuclear weapons, alternative energy in the form of heavy oil, and light-water reactors. On March 9, 1995, the KEDO (Korean Energy Development Organization) was established as an international organization to implement the light-water reactor project promised in the Agreement.

The two sides made another important breakthrough in 2000. After the 1994 agreement, the U.S. further discovered another suspicious nuclear facility in Kumchang-ri and evidence of uranium enrichment activities. Both sides agreed to resolve the uranium enrichment issue and the inspection of Kumchang-ri on October 12, 2000, less than a month before the U.S. presidential election. In the Joint Communique, the U.S. confirmed no hostile intent toward North Korea and the implementation of the Agreed Framework (Carlin and Lewis, 2008, 43).

Negotiations During Periods of a High Partisan Divide

Within a year of the Joint Communiqué, two major events had upset the cooperative relationship: Republican George W. Bush's presidential victory and the September 11, 2001 terrorist attack on New York City and Washington DC. In the 2002 State of the Union address, President Bush categorized North Korea in the same group with Iraq and Iran as "terrorist allies" and "an axis of evil, arming to threaten the peace of the world." The Bush administration did not hesitate to call North Korea a second major target after Iraq in the war against terrorism.¹³ The rhetoric against North Korea escalated over time. Vice President Dick Cheney rejected the Chinese plan to freeze and dismantle North Korea's nuclear program in return for security guarantees and economic aid, allegedly saying "I have been charged by the President with making sure that none of the tyrannies in the world are negotiated with. We don't negotiate with evil; we defeat it."¹⁴

The newly elected Republican government was ready to re-examine the Clinton administration's commitment to North Korea in the Agreed Framework if circumstances permit. In October 2002, North Korea offered the circumstance. As U.S. envoy, Assistant Secretary of State James Kelly visited North Korea for the first high-level talks between the George W. Bush administration and North Korea in October, 2002. Enraged by the U.S. delegates' lukewarm attitudes, North Korea's First Vice Foreign Minister Kang Sok Ju hinted at the possible existence of a uranium-based

¹³Under Secretary for Arms Control and International Security John R. Bolton said that after Iraq, North Korea should be the next focus in preventing the proliferation of weapons of mass destruction (Bolton, 2002). Inside North Korea, the U.S. invasion of Iraq simply confirmed top leaders' belief that nuclear weapons were the only way to secure their regime's survival. After a trip to North Korea on September 17, 2002, the Japanese Prime Minister, Junichiro Koizumi, told reporters why the North Korean leader pursued his nuclear goal so aggressively:

I strongly urged Chairman Kim [Jung Il] to give all those things a good deal of thought and not miss the chance to be welcomed into the international community, which is what would happen if North Korea were to dismantle its nuclear programs.... However, it seems that Chairman Kim doubts whether North Korea's security could be completely guaranteed if its nuclear programs were to be dismantled.

Source: http://www.kantei.go.jp/foreign/koizumispeech/2004/05/22press_e.html.

¹⁴Hamish McDonald, "Cheney's tough talking derails negotiations with North Korea," *The Sydney Morning Herald*, December 22, 2003.

nuclear weapons program. This remark reassured the Bush administration's suspicion about North Korea's hidden nuclear programs. Secretary of State Colin Powell quickly stated that the 1994 Agreed Framework was invalidated because North Korea was pursuing a covert uranium-based nuclear weapons program. The U.S. suspended the delivery of heavy oil to North Korea and funding to KEDO in November 2002, both of which were promised in the Agreed Framework in return for denuclearization (Kimball and Crail, 2010).

Both sides disagreed over whether developing a uranium enrichment program was a violation of the Agreed Framework. Thus, Harrison asked "what if those assessments [Kelly and the Bush administration] were exaggerated and blurred the important distinction between weapons-grade uranium enrichment (which would clearly violate the 1994 Agreed Framework) and lower levels of enrichment (which were technically forbidden by the 1994 accord but are permitted by the nuclear Nonproliferation Treaty and do not produce uranium suitable for nuclear weapons)?" (Harrison, 2005). In other words, the lack of specification on uranium enrichment programs in the Agreed Framework made non-compliance more feasible from both sides. Instead, a large part of the Agreed Framework focused on the project of light-water reactor power plants.¹⁵

However, amid exchanges of hostile rhetoric, the U.S. and North Korea managed to make three important agreements through the six-party talks that included the U.S., North Korea, China, South Korea, Japan, and Russia. The first one was the 2005 agreement in which North Korea agreed to eliminate the nuclear programs in return for security guarantees and normalization of the US-North Korea relationship.¹⁶ The second and third agreements came in 2007 and 2008. How can we explain the incentive of North Korea to reach an agreement with the George W.

¹⁵The agreement is available at the KEDO's website: <http://www.kedo.org/pdfs/AgreedFramework.pdf>.

¹⁶The Ministry of Foreign Affairs of the People's Republic of China, "Joint Statement of the Fourth Round of the Six-Party Talks," Beijing, September 19, 2005.

Bush administration? In fact, none of these agreements was fully implemented by either side. So an easy answer is that both sides did not consider the agreements as serious agreements to comply with. Also, one may argue that the agreements were all made through the six-party talks in which the U.S. shared the burden with other countries. These answers are not satisfactory because they cannot explain the lack of agreement between the Obama administration and North Korea. From the perspective of our model, the formation of agreements between the George W. Bush administration and North Korea was possible largely due to the *presence of a deep partisan divide on foreign policy* in the U.S. As our model predicts, a commitment made by a hawkish negotiator is more likely to be respected by successive governments than a commitment made by a dovish negotiator when a partisan divide over foreign policy is substantial. In contrast, the lack of agreement between the Obama administration and North Korea reflects the fact that the target country is reluctant to form an agreement with a dovish negotiator in the shadow of a hawkish opposition party in a highly partisan domestic environment.

After a new Democratic administration was elected in 2008, North Korea reactivated its nuclear facilities and “claimed to have successfully tested a nuclear weapon as powerful as the atomic bomb that destroyed Hiroshima.”¹⁷ The Obama administration hinted that “the 2000 DPRK-U.S. Joint Communiqué” can be restored “as a basis for dialogue with North Korea.”¹⁸ North Korea responded to this signal to the U.S. “the October 2000 Joint Communiqué, which brought Secretary Madeleine Albright to Pyongyang, is a good place to start” (Hecker, 2010, 8). However, two recent events in the Yellow Sea next to the Korean peninsula – the sinking of the Cheonan and the North Korea’s artillery attack on Yeonpyung island – turned back the relationship into a hostile one.

¹⁷“North Korea tests nuclear weapon ‘as powerful as Hiroshima bomb,’” *Guardian*, May 25, 2009

¹⁸“October 2000 DPRK-U.S. Joint Communiqué impact on bilateral talks,” December 1, 2009, *The Hankyoreh*.

Concluding Remarks

The argument that reputational concerns promote compliance is at the center of the literature of international cooperation (Keohane, 1984; Simmons, 2000; Abbott and Snidal, 2000; Tomz, 2007). However, previous studies utilize unitary state actors or individual leaders as the unit of analysis and hence tend to lose sight of tensions between successive governments within a state. We showed that political parties can be a useful unit of analysis to understand the complex interplay among party polarization, electoral uncertainty, and reputational sanctions. Specifically speaking, our model suggested that even when a hawkish negotiator is not a reliable partner, it can still make a mutually beneficial agreement in a highly partisan domestic environment. When a dovish party's hands are tied by its partisan commitment to international cooperation, an unreliable hawkish negotiator can make a deep agreement even though it has no intention to comply with its own agreement. In this equilibrium, a hawkish negotiator promises to offer large concessions it will never implement in the future. However, the negotiating partner still has an incentive to accept such an offer, because if a dovish party wins election, it will implement the generous promise previously made by the hawkish government. Also, we showed that in a highly partisan environment, a dovish party can lessen its bargaining disadvantage by formalizing an agreement or allowing the participation of opposition parties in the ratification process, which makes costs of reputational sanctions symmetric between parties and hence makes it difficult for a future government to defect.

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Appendix

This section formally derives a unique subgame perfect equilibrium. For notational convenience, we denote the Hawk and the Dove parties in S_1 by S_1^D and S_1^H , respectively. The equilibrium can be summarized as follows:

Case 1 When S_1^D is in charge of international negotiation, S_1^D keeps a promise if and only if $x \leq r_i \theta_D$ while S_1^H keeps a promise if and only if $x \leq r_{\sim i} \theta_H$; S_2 accepts an offer if and only if

$$x \in \left\{ [1, r_{\sim i} \theta_H] \cup \left[\max \left\{ \frac{1}{p}, r_{\sim i} \theta_H \right\}, r_i \theta_D \right] \right\};$$

and S_1^D offers

$$x = \begin{cases} 1 & \text{if } \frac{1}{r_{\sim i}} \leq \theta_H \\ \frac{1}{p} & \text{if } \theta_H < \frac{1}{r_{\sim i}} \text{ and } \frac{1}{pr_i} \leq \theta_D \\ [0, \infty) & \text{otherwise.} \end{cases}$$

Case 2 When S_1^H is in charge of international negotiation and $\frac{\theta_D}{\theta_H} > \frac{r_i}{r_{\sim i}}$, S_1^D keeps a promise if and only if $x \leq r_{\sim i} \theta_D$ while S_1^H keeps a promise if and only if $x \leq r_{\sim i} \theta_i$; S_2 accepts an offer if and only if

$$x \in \left\{ [1, r_i \theta_H] \cup \left[\max \left\{ \frac{1}{p}, r_i \theta_H \right\}, r_{\sim i} \theta_D \right] \right\};$$

and S_1^H offers

$$x = \begin{cases} 1 & \text{if } \frac{1}{r_i} \leq \theta_H \\ \left[\frac{1}{p}, r_{\sim i} \theta_D \right] & \text{if } \theta_H < \frac{1}{r_i} \text{ and } \frac{1}{pr_{\sim i}} \leq \theta_D \\ [0, \infty) & \text{otherwise.} \end{cases}$$

Case 3 When S_1^H is in charge of international negotiation and $\frac{\theta_D}{\theta_H} < \frac{r_i}{r_{\sim i}}$, S_1^D keeps a promise if and only if $x \leq r_{\sim i} \theta_D$ while S_1^H keeps a promise if and only if $x \leq r_i \theta_H$; S_2 accepts an offer if and only if

$$x \in \left\{ [1, r_{\sim i} \theta_D] \cup \left[\max \left\{ \frac{1}{(1-p)}, r_{\sim i} \theta_D \right\}, r_i \theta_H \right] \right\};$$

and S_1^H offers

$$x = \begin{cases} 1 & \text{if } \frac{1}{r_{\sim i}} \leq \theta_D \\ \frac{1}{(1-p)} & \text{if } \theta_D < \frac{1}{r_{\sim i}} \text{ and } \frac{1}{(1-p)r_i} \leq \theta_H \\ [0, \infty) & \text{otherwise.} \end{cases}$$

Proof. In the following, for notational convenience, we denote “keep a promise” and “break a promise” respectively by C and D . The game is solved by backward induction as follows.

Dovish Negotiator

Suppose S_1^D is in charge of international negotiation. After winning election, S_1^D keeps a promise if and only if $1 - \frac{x}{\theta_D} \geq 1 - r_i$, while S_1^H keeps a promise if and only if $1 - \frac{x}{\theta_H} \geq 1 - r_{\sim i}$. Hence, (C, C) if $x \in [0, r_{\sim i}\theta_H]$, (C, D) if $x \in (r_{\sim i}\theta_H, r_i\theta_D]$, and (D, D) if $x \in (r_i\theta_D, \infty)$, where the first element of (\cdot, \cdot) indicates S_1^D 's action while the second element indicates S_1^H 's.

Next, let us consider S_2 's problem of whether or not to accept an offer. First, if S_1^D promises to offer $x \in [0, r_{\sim i}\theta_H]$, then S_2 receives $px + (1 - p)x$ by accepting the offer and 1 by rejecting it. Hence, S_2 accepts such an offer if and only if $x \geq 1$. Second, if S_1^D promises to offer $x \in (r_{\sim i}\theta_H, r_i\theta_D]$, then S_2 receives $px + (1 - p)(0)$ by accepting the offer and 1 by rejecting it. Hence, S_2 accepts such an offer if and only if $x \geq \frac{1}{p}$. Lastly, if S_1^D promises to offer $x \in (r_i\theta_D, \infty)$, then S_2 receives $p(0) + (1 - p)(0)$ by accepting the offer and 1 by rejecting it. Hence, S_2 never accepts such an offer.

Depending on the locations of $1, \frac{1}{p}, r_{\sim i}\theta_H$, and $r_i\theta_D$, we can conceive of five possible situations:

(1) $1 < \frac{1}{p} \leq r_{\sim i}\theta_H < r_i\theta_D$

The above-mentioned inequality implies $\frac{1}{pr_{\sim i}} \leq \theta_H$ and $\frac{1}{pr_i} < \theta_D$. In this case, S_1^D has three options at the bargaining stage. First, if S_1^D promises to offer $x \in [1, r_{\sim i}\theta_H]$, then S_2 accepts it and the enforcement outcome becomes (C, C) . Hence, the expected payoff to S_1^D of promising such an offer is $p(1 - \frac{x}{\theta_D})$. Second, if S_1^D promises to offer $x \in (r_{\sim i}\theta_H, r_i\theta_D]$, then S_2 accepts it and the enforcement outcome becomes (C, D) . Hence, the expected payoff to S_1^D of promising such an offer is $p(1 - \frac{x}{\theta_D})$. Lastly, if S_1^D promises to offer $x \notin [1, r_i\theta_D]$, then S_2 rejects it, and thus the payoff to S_1^D of promising such an offer is 0. Therefore, S_1^D promises to offer $x = 1$ if $\theta_D \geq 1$ while $x \notin [1, r_i\theta_D]$ if $\theta_D < 1$. But, the condition $\frac{1}{pr_i} < \theta_D$ implies $\theta_D > 1$. Hence, S_1^D promises to offer $x = 1$ when $\frac{1}{pr_{\sim i}} \leq \theta_H$ and $\frac{1}{pr_i} < \theta_D$.

(2) $1 \leq r_{\sim i}\theta_H < \frac{1}{p} \leq r_i\theta_D$

The above-mentioned inequality implies $\frac{1}{r_{\sim i}} \leq \theta_H < \frac{1}{pr_{\sim i}}$ and $\frac{1}{pr_i} \leq \theta_D$. In this case, S_1^D has three options at the bargaining stage. First, if S_1^D promises to offer $x \in [1, r_{\sim i}\theta_H]$, then S_2 accepts it and the enforcement outcome becomes (C, C) . Hence, the expected payoff to S_1^D of promising such an offer is $p(1 - \frac{x}{\theta_D})$. Second, if S_1^D promises to offer $x \in [\frac{1}{p}, r_i\theta_D]$, then S_2 accepts it and the enforcement outcome becomes (C, D) . Hence, the expected payoff to S_1^D of promising such an offer is $p(1 - \frac{x}{\theta_D})$. Lastly, if S_1^D promises to offer $x \notin \{[1, r_{\sim i}\theta_H] \cup [\frac{1}{p}, r_i\theta_D]\}$, then S_2 rejects it, and thus the payoff to S_1^D of promising such an offer is 0. Therefore, S_1^D promises to offer $x = 1$ if $\theta_D \geq 1$ while $x \notin \{[1, r_{\sim i}\theta_H] \cup [\frac{1}{p}, r_i\theta_D]\}$ if $\theta_D < 1$. But, the condition $\frac{1}{pr_i} < \theta_D$ implies $\theta_D > 1$. Hence, S_1^D promises to offer $x = 1$ when $\frac{1}{r_{\sim i}} \leq \theta_H < \frac{1}{pr_{\sim i}}$ and $\frac{1}{pr_i} \leq \theta_D$.

(3) $1 \leq r_{\sim i}\theta_H < r_i\theta_D < \frac{1}{p}$

The above-mentioned inequality implies $\frac{1}{r_{\sim i}} \leq \theta_H < \frac{1}{pr_{\sim i}}$ and $\frac{1}{r_i} < \theta_D < \frac{1}{pr_i}$. In this case, S_1^D has two options at the bargaining stage. First, if S_1^D promises to offer $x \in [1, r_{\sim i}\theta_H]$, then S_2 accepts it and the enforcement outcome becomes (C, C) . Hence, the expected payoff to S_1^D of promising

such an offer is $p(1 - \frac{x}{\theta_D})$. Second, if S_1^D promises to offer $x \notin [1, r_{\sim i}\theta_H]$, then S_2 rejects it, and thus the payoff to S_1^D of promising such an offer is 0. Therefore, S_1^D promises to offer $x = 1$ if $\theta^D \geq 1$ while $x \notin [1, r_{\sim i}\theta_H]$ if $\theta_D < 1$. But, the condition $\frac{1}{r_i} < \theta_D$ implies $\theta_D > 1$. Hence, S_1^D promises to offer $x = 1$ when $\frac{1}{r_{\sim i}} \leq \theta_H < \frac{1}{pr_{\sim i}}$ and $\frac{1}{r_i} < \theta_D < \frac{1}{pr_i}$.

$$(4) \quad r_{\sim i}\theta_H < 1 < \frac{1}{p} \leq r_i\theta_D$$

The above-mentioned inequality implies $\theta_H < \frac{1}{r_{\sim i}}$ and $\frac{1}{pr_i} \leq \theta_D$. In this case, S_1^D has two options at the bargaining stage. First, if S_1^D promises to offer $x \in [\frac{1}{p}, r_i\theta_D]$, then S_2 accepts it and the enforcement outcome becomes (C, D) . Hence, the expected payoff to S_1^D of promising such an offer is $p(1 - \frac{x}{\theta_D})$. Second, if S_1^D promises to offer $x \notin [\frac{1}{p}, r_i\theta_D]$, then S_2 rejects it, and thus the payoff to S_1^D of promising such an offer is 0. Therefore, S_1^D promises to offer $x = \frac{1}{p}$ if $\theta_D \geq \frac{1}{p}$ while $x \notin [\frac{1}{p}, r_i\theta_D]$ if $\theta_D < \frac{1}{p}$. But, the condition $\frac{1}{pr_i} < \theta_D$ implies $\theta_D > \frac{1}{p}$. Hence, S_1^D promises to offer $x = \frac{1}{p}$ when $\theta_H < \frac{1}{r_{\sim i}}$ and $\frac{1}{pr_i} \leq \theta_D$.

$$(5) \quad r_{\sim i}\theta_H < 1 \leq r_i\theta_D < \frac{1}{p} \text{ or } r_{\sim i}\theta_H < r_i\theta_D \leq 1 < \frac{1}{p}$$

The above-mentioned inequality implies $\theta_H < \frac{1}{r_{\sim i}}$ and $\theta_D < \frac{1}{pr_i}$. In this case, S_2 rejects any offer promised by S_1^D .

Hawkish Negotiator

Next, suppose S_1^H is in charge of international negotiation. After winning election, S_1^D keeps a promise if and only if $1 - \frac{x}{\theta_D} \geq 1 - r_{\sim i}$, while S_1^H keeps a promise if and only if $1 - \frac{x}{\theta_H} \geq 1 - r_i$. Hence, when $\frac{\theta_D}{\theta_H} > \frac{r_i}{r_{\sim i}}$, (C, C) if $x \in [0, r_i\theta_H]$, (C, D) if $x \in (r_i\theta_H, r_{\sim i}\theta_D]$, and (D, D) if $x \in (r_{\sim i}\theta_D, \infty)$. On the other hand, when $\frac{\theta_D}{\theta_H} < \frac{r_i}{r_{\sim i}}$, (C, C) if $x \in [0, r_{\sim i}\theta_D]$, (D, C) if $x \in (r_{\sim i}\theta_D, r_i\theta_H]$, and (D, D) if $x \in (r_i\theta_H, \infty)$.

$$\text{Case I. } \frac{\theta_D}{\theta_H} > \frac{r_i}{r_{\sim i}}$$

Suppose $\frac{\theta_D}{\theta_H} > \frac{r_i}{r_{\sim i}}$. Now, let us consider S_2 's problem of whether or not to accept an offer. First, if S_1^H promises to offer $x \in [0, r_i\theta_H]$, then S_2 receives $px + (1 - p)x$ by accepting the offer and 1 by rejecting it. Hence, S_2 accepts such an offer if and only if $x \geq 1$. Second, if S_1^H promises to offer $x \in (r_i\theta_H, r_{\sim i}\theta_D]$, then S_2 receives $px + (1 - p)(0)$ by accepting the offer and 1 by rejecting it. Hence, S_2 accepts such an offer if and only if $x \geq \frac{1}{p}$. Lastly, if S_1^H promises to offer $x \in (r_{\sim i}\theta_D, \infty)$, then S_2 receives $p(0) + (1 - p)(0)$ by accepting the offer and 1 by rejecting it. Hence, S_2 never accepts such an offer.

Depending on the locations of $1, \frac{1}{p}, r_i\theta_H$, and $r_{\sim i}\theta_D$, we can conceive of five possible situations:

$$(1) \quad 1 < \frac{1}{p} \leq r_i\theta_H < r_{\sim i}\theta_D$$

The above-mentioned inequality implies $\frac{1}{pr_i} \leq \theta_H$ and $\frac{1}{pr_{\sim i}} < \theta_D$. In this case, S_1^H has three options at the bargaining stage. First, if S_1^H promises to offer $x \in [1, r_i\theta_H]$, then S_2 accepts it and

the enforcement outcome becomes (C, C) . Hence, the expected payoff to S_1^H of promising such an offer is $(1-p)(1-\frac{x}{\theta_H})$. Second, if S_1^H promises to offer $x \in (r_i\theta_H, r_{\sim i}\theta_D]$, then S_2 accepts it and the enforcement outcome becomes (C, D) . Hence, the expected payoff to S_1^H of promising such an offer is $(1-p)(1-r_i)$. Lastly, if S_1^H promises to offer $x \notin [1, r_{\sim i}\theta_D]$, then S_2 rejects it, and thus the payoff to S_1^H of promising such an offer is 0. Therefore, S_1^H promises to offer $x = 1$ if $\theta_H \geq \frac{1}{r_i}$ while $x \notin [1, r_{\sim i}\theta_D]$ if $\theta_H < \frac{1}{r_i}$. But, the condition $\frac{1}{pr_i} < \theta_H$ implies $\theta_H > \frac{1}{r_i}$. Hence, S_1^H promises to offer $x = 1$ when $\frac{1}{pr_i} \leq \theta_H$ and $\frac{1}{pr_{\sim i}} < \theta_D$.

$$(2) 1 \leq r_i\theta_H < \frac{1}{p} \leq r_{\sim i}\theta_D$$

The above-mentioned inequality implies $\frac{1}{r_i} \leq \theta_H < \frac{1}{pr_i}$ and $\frac{1}{pr_{\sim i}} \leq \theta_D$. In this case, S_1^H has three options at the bargaining stage. First, if S_1^H promises to offer $x \in [1, r_i\theta_H]$, then S_2 accepts it and the enforcement outcome becomes (C, C) . Hence, the expected payoff to S_1^H of promising such an offer is $(1-p)(1-\frac{x}{\theta_H})$. Second, if S_1^H promises to offer $x \in [\frac{1}{p}, r_{\sim i}\theta_D]$, then S_2 accepts it and the enforcement outcome becomes (C, D) . Hence, the expected payoff to S_1^H of promising such an offer is $(1-p)(1-r_i)$. Lastly, if S_1^H promises to offer $x \notin \{[1, r_i\theta_H] \cup [\frac{1}{p}, r_{\sim i}\theta_D]\}$, then S_2 rejects it, and thus the payoff to S_1^H of promising such an offer is 0. Therefore, S_1^H promises to offer $x = 1$ if $\theta_H \geq \frac{1}{r_i}$ while $x \notin \{[1, r_i\theta_H] \cup [\frac{1}{p}, r_{\sim i}\theta_D]\}$ if $\theta_H < \frac{1}{r_i}$. But, the condition $\frac{1}{r_i} < \theta_H$ implies $\theta_H > \frac{1}{r_i}$. Hence, S_1^H promises to offer $x = 1$ when $\frac{1}{r_i} \leq \theta_H < \frac{1}{pr_i}$ and $\frac{1}{pr_{\sim i}} \leq \theta_D$.

$$(3) 1 \leq r_i\theta_H < r_{\sim i}\theta_D < \frac{1}{p}$$

The above-mentioned inequality implies $\frac{1}{r_i} \leq \theta_H < \frac{1}{pr_i}$ and $\frac{1}{r_{\sim i}} < \theta_D < \frac{1}{pr_{\sim i}}$. In this case, S_1^H has two options at the bargaining stage. First, if S_1^H promises to offer $x \in [1, r_i\theta_H]$, then S_2 accepts it and the enforcement outcome becomes (C, C) . Hence, the expected payoff to S_1^H of promising such an offer is $(1-p)(1-\frac{x}{\theta_H})$. Second, if S_1^H promises to offer $x \notin [1, r_i\theta_H]$, then S_2 rejects it, and thus the payoff to S_1^H of promising such an offer is 0. Therefore, S_1^H promises to offer $x = 1$ if $\theta_H \geq 1$ while $x \notin [1, r_i\theta_H]$ if $\theta_H < 1$. But, the condition $\frac{1}{r_i} < \theta_H$ implies $\theta_H > 1$. Hence, S_1^H promises to offer $x = 1$ when $\frac{1}{r_i} \leq \theta_H < \frac{1}{pr_i}$ and $\frac{1}{r_{\sim i}} < \theta_D < \frac{1}{pr_{\sim i}}$.

$$(4) r_i\theta_H < 1 < \frac{1}{p} \leq r_{\sim i}\theta_D$$

The above-mentioned inequality implies $\theta_H < \frac{1}{r_i}$ and $\frac{1}{pr_{\sim i}} \leq \theta_D$. In this case, S_1^H has two options at the bargaining stage. First, if S_1^H promises to offer $x \in [\frac{1}{p}, r_{\sim i}\theta_D]$, then S_2 accepts it and the enforcement outcome becomes (C, D) . Hence, the expected payoff to S_1^H of promising such an offer is $(1-p)(1-r_i)$. Second, if S_1^H promises to offer $x \notin [\frac{1}{p}, r_{\sim i}\theta_D]$, then S_2 rejects it, and thus the payoff to S_1^H of promising such an offer is 0. Therefore, S_1^H promises to offer $x \in [\frac{1}{p}, r_{\sim i}\theta_D]$ when $\theta_H < \frac{1}{r_i}$ and $\frac{1}{pr_{\sim i}} \leq \theta_D$.

$$(5) r_i\theta_H < 1 \leq r_{\sim i}\theta_D < \frac{1}{p} \text{ or } r_i\theta_H < r_{\sim i}\theta_D \leq 1 < \frac{1}{p}$$

The above-mentioned inequality implies $\theta_H < \frac{1}{r_i}$ and $\theta_D < \frac{1}{pr_{\sim i}}$. In this case, S_2 rejects any offer promised by S_1^H .

Case II. $\frac{\theta_D}{\theta_H} < \frac{r_i}{r_{\sim i}}$

Next, suppose $\frac{\theta_D}{\theta_H} < \frac{r_i}{r_{\sim i}}$. Now, let us consider S_2 's problem of whether or not to accept an offer. First, if S_1^H promises to offer $x \in [0, r_{\sim i}\theta_D]$, then S_2 receives $px + (1-p)x$ by accepting the offer and 1 by rejecting it. Hence, S_2 accepts such an offer if and only if $x \geq 1$. Second, if S_1^H promises to offer $x \in (r_{\sim i}\theta_D, r_i\theta_H]$, then S_2 receives $p(0) + (1-p)x$ by accepting the offer and 1 by rejecting it. Hence, S_2 accepts such an offer if and only if $x \geq \frac{1}{(1-p)}$. Lastly, if S_1^H promises to offer $x \in (r_i\theta_H, \infty)$, then S_2 receives $p(0) + (1-p)(0)$ by accepting the offer and 1 by rejecting it, and so S_2 never accepts such an offer.

Depending on the locations of 1, $\frac{1}{(1-p)}$, $r_{\sim i}\theta_D$, and $r_i\theta_H$, we can conceive of five possible situations:

$$(1) 1 < \frac{1}{(1-p)} \leq r_{\sim i}\theta_D < r_i\theta_H$$

The above-mentioned inequality implies $\frac{1}{(1-p)r_{\sim i}} \leq \theta_D$ and $\frac{1}{(1-p)r_i} < \theta_H$. In this case, S_1^H has three options at the bargaining stage. First, if S_1^H promises to offer $x \in [1, r_{\sim i}\theta_D]$, then S_2 accepts it and the enforcement outcome becomes (C, C) . Hence, the expected payoff to S_1^H of promising such an offer is $(1-p)(1 - \frac{x}{\theta_H})$. Second, if S_1^H promises to offer $x \in (r_{\sim i}\theta_D, r_i\theta_H]$, then S_2 accepts it and the enforcement outcome becomes (D, C) . Hence, the expected payoff to S_1^H of promising such an offer is $(1-p)(1 - \frac{x}{\theta_H})$. Lastly, if S_1^H promises to offer $x \notin [1, r_i\theta_H]$, then S_2 rejects it, and thus the payoff to S_1^H of promising such an offer is 0. Therefore, S_1^H promises to offer $x = 1$ if $\theta_H \geq 1$ while $x \notin [1, r_i\theta_H]$ if $\theta_H < 1$. But, the condition $\frac{1}{(1-p)r_i} < \theta_H$ implies $\theta_H > 1$. Hence, S_1^H promises to offer $x = 1$ when $\frac{1}{(1-p)r_{\sim i}} \leq \theta_D$ and $\frac{1}{(1-p)r_i} < \theta_H$.

$$(2) 1 \leq r_{\sim i}\theta_D < \frac{1}{(1-p)} \leq r_i\theta_H$$

The above-mentioned inequality implies $\frac{1}{r_{\sim i}} \leq \theta_D < \frac{1}{(1-p)r_{\sim i}}$ and $\frac{1}{(1-p)r_i} \leq \theta_H$. In this case, S_1^H has three options at the bargaining stage. First, if S_1^H promises to offer $x \in [1, r_{\sim i}\theta_D]$, then S_2 accepts it and the enforcement outcome becomes (C, C) . Hence, the expected payoff to S_1^H of promising such an offer is $(1-p)(1 - \frac{x}{\theta_H})$. Second, if S_1^H promises to offer $x \in [\frac{1}{(1-p)}, r_i\theta_H]$, then S_2 accepts it and the enforcement outcome becomes (D, C) . Hence, the expected payoff to S_1^H of promising such an offer is $(1-p)(1 - \frac{x}{\theta_H})$. Lastly, if S_1^H promises to offer $x \notin \{[1, r_{\sim i}\theta_D] \cup [\frac{1}{(1-p)}, r_i\theta_H]\}$, then S_2 rejects it, and thus the payoff to S_1^H of promising such an offer is 0. Therefore, S_1^H promises to offer $x = 1$ if $\theta_H \geq 1$ while $x \notin \{[1, r_{\sim i}\theta_D] \cup [\frac{1}{(1-p)}, r_i\theta_H]\}$ if $\theta_H < 1$. But, the condition $\frac{1}{(1-p)r_i} < \theta_H$ implies $\theta_H > 1$. Hence, S_1^H promises to offer $x = 1$ when $\frac{1}{r_{\sim i}} \leq \theta_D < \frac{1}{(1-p)r_{\sim i}}$ and $\frac{1}{r_i} \leq \theta_H$.

$$(3) 1 \leq r_{\sim i}\theta_D < r_i\theta_H < \frac{1}{(1-p)}$$

The above-mentioned inequality implies $\frac{1}{r_{\sim i}} \leq \theta_D < \frac{1}{(1-p)r_{\sim i}}$ and $\frac{1}{r_i} < \theta_H < \frac{1}{(1-p)r_i}$. In this case, S_1^H has two options at the bargaining stage. First, if S_1^H promises to offer $x \in [1, r_{\sim i}\theta_D]$, then S_2 accepts it and the enforcement outcome becomes (C, C) . Hence, the expected payoff to S_1^H of promising such an offer is $(1-p)(1 - \frac{x}{\theta_H})$. Second, if S_1^H promises to offer $x \notin [1, r_{\sim i}\theta_D]$, then

S_2 rejects it, and thus the payoff to S_1^H of promising such an offer is 0. Therefore, S_1^H promises to offer $x = 1$ if $\theta_H \geq 1$ while $x \notin [1, r_{\sim i}\theta_D]$ if $\theta_H < 1$. But, the condition $\frac{1}{r_i} < \theta_H$ implies $\theta_H > 1$. Hence, S_1^H promises to offer $x = 1$ when $\frac{1}{r_{\sim i}} \leq \theta_D < \frac{1}{(1-p)r_{\sim i}}$ and $\frac{1}{r_i} < \theta_H < \frac{1}{(1-p)r_i}$.

$$(4) \quad r_{\sim i}\theta_D < 1 < \frac{1}{(1-p)} \leq r_i\theta_H$$

The above-mentioned inequality implies $\theta_D < \frac{1}{r_{\sim i}}$ and $\frac{1}{(1-p)r_i} \leq \theta_H$. In this case, S_1^H has two options at the bargaining stage. First, if S_1^H promises to offer $x \in [\frac{1}{(1-p)}, r_i\theta_H]$, then S_2 accepts it and the enforcement outcome becomes (D, C) . Hence, the expected payoff to S_1^H of promising such an offer is $(1-p)(1 - \frac{x}{\theta_H})$. Second, if S_1^H promises to offer $x \notin [\frac{1}{(1-p)}, r_i\theta_H]$, then S_2 rejects it, and so the expected payoff to S_1^H of promising such an offer is 0. Therefore, S_1^H promises to offer $x = \frac{1}{(1-p)}$ if $\theta_H \geq \frac{1}{(1-p)}$ while $x \notin [\frac{1}{(1-p)}, r_{\sim i}\theta_H]$ if $\theta_H < \frac{1}{(1-p)}$. But, the condition $\frac{1}{(1-p)r_i} < \theta_H$ implies $\theta_H > \frac{1}{(1-p)}$. Hence, S_1^H promises to offer $x = \frac{1}{(1-p)}$ when $\theta_D < \frac{1}{r_{\sim i}}$ and $\frac{1}{(1-p)r_i} \leq \theta_H$.

$$(5) \quad r_{\sim i}\theta_D < 1 \leq r_i\theta_H < \frac{1}{(1-p)} \quad \text{or} \quad r_{\sim i}\theta_D < r_i\theta_H \leq 1 < \frac{1}{(1-p)}$$

The above-mentioned inequality implies $\theta_D < \frac{1}{r_{\sim i}}$ and $\theta_H < \frac{1}{(1-p)r_i}$. In this case, S_2 rejects any offer proposed by S_1^H . Q.E.D.